Beneath its prickly surface, the thistle plant conceals a little-known practical side. In the southwestern region of the Iberian Peninsula, the thistle is used as a curdling agent to make cheese. In antiquity, thistle-bloom cheeses were apparently made across a broad geographical area. Today, these cheeses are produced in the southwestern part of the Iberian Peninsula, a region including Estremadura and the mountainous areas of Huelva (Andalusia) and extending west to the border with Portugal, north to Salamanca, and east to Toledo and Córdoba. These cheeses are also found, though less abundantly, in southeastern Aragon, in the province of Valencia, in the Pyrenees of Catalonia, in Mallorca (the Balearic Islands), and near the village of Guía in the Canary Islands. In other regions where the thistle was once used for curdling, cheese is now made with animal products or with synthetic coagulants.

The history and geographical distribution of thistle-bloom cheeses reveal the importance of the specific locales in which they are produced. The type of animal, the particular breed, the stage of lactation at which the animal is milked, the soil, the climate—all of these factors contribute to the individuality of each cheese. Along with these highly variable conditions, the traditions and talents of the cheese makers themselves must also be considered.

Ancient Methods

Even before pottery was invented, animal milk may have been part of the human diet. The stomachs and skins of animals were used to hold liquid and solid foods and served as improvised cooking vessels. Milk may have been stored in skins with their openings tightly knotted to make them watertight. The traces of enzymes in these rudimentary containers would have acted upon the milk, which would have curdled when exposed to the steady heat of the sun. Any accidental perforations in the skin would have sufficed to drain the whey from the curd, thereby producing cheese.

As late as the mid-twentieth century, in the cattle-grazing areas of León, butter was still being made in a leather bag, the odrecillo. A woman would fill the bag with cream and place it on her lap, then “churn” the contents with rhythmic movements of her body (batir el odrecillo) as she sat performing other chores. The repetitive motion and the heat of her body turned the cream to butter; the whey drained out through tiny holes pierced in the skin of the bag. While the process is not quite the same for butter as for cheese, this practice reveals how cheese making is likely to have originated. Today, in some areas of the Caucasus, similar methods are still in use: the Turkish tulum, for example, is a goat cheese made and stored in the stomach of a kid.

Cheese making, in its early stages, is thought to have involved mainly animal enzymes to effect coagulation. Later, however, as agriculture became more advanced, the curdling properties of the thistle flower were discovered.

Plant and Animal Coagulants

Early works on agriculture in Spain indicate that both animal and plant products were used as coagulants to cause milk to curdle—to separate into solid curds and liquid whey. The curds are then strained and pressed to form cheese. Animal coagulants, called rennet, are obtained from fluids in the stomachs of unweaned ruminants (lambs, kids, or calves) or from fresh or dried sections of the abomasum (the fourth stomach) of these animals after slaughter. Rennet contains enzymes, including chymosin, that promote coagulation.

The fig tree and the thistle plant also contain substances that curdle milk. Both types of plant coagulant are used in Spain to make cheese, though not as extensively as they once were. The sap from the leaves of the fig tree, Ficus carica, is used to curdle the milk for mató, a fresh creamy cheese made in the Balearic Islands and Catalonia. The pistils of the wild thistle, Cynara cardunculus L. and Cynara humilis L., native to the Mediterranean basin, Madeira, and the Canary Islands, are used more extensively. The thistle coagulant is known as hierba cuajo.

The thistle contains several enzymes that catalyze the curdling of milk, including cyprosin and cardosin. These enzymes are actually aspartic proteinases, which cause the breakdown (proteolysis) of milk proteins (caseins). Milk curdled by means of these enzymes has a uniform consistency and is free of the bitterness frequently associated with milk that has been coagulated by animal enzymes.
Palladius’s *De re rustica*, translated into Spanish in the fourteenth century, advises:

... in that season and month you must undertake the making of cheeses. First you must prove and obtain the coagulant. With which the milk curdles and sours and thickens ... Because many people who do not have the curdling herb. Take lambs or kids. As they are born. And slaughter them. And that milk which they find sticking to the mouth of the stomach, they take ... and dry. And put it in milk that is a little hot or warm ... Others put in curdling herb, which is the flower of wild thistle. And they mash it. And mix it with a little milk. And they put it in the kettle or pot where the milk is. And then it curdles if there is any heat nearby ... And this is the best way. They say that it curdles in the same way with the milk of the fig-trees ...¹

In his 1513 treatise on agriculture in Spain, *Obra de agricultura*, Gabriel Alonso de Herrera goes further, noting that “... all cheeses made with (animal) coagulants are bitter ... and even so with the milk of fig-trees. Cheese becomes flavorful, for perfection of taste the best is curdled with *the thistle flower*, which is sweet and not bitter like that made with animal coagulants ...”²

But thistle coagulants also have some disadvantages. For one thing, the “curdling herb” is not as dependable as animal coagulants are. The thistle plants that thrive in the Mediterranean countryside do not always contain cardosin, and even when they do, the enzyme is not always present in sufficient quantity to effect curdling. Furthermore, of the three types of cyprosin that thistle flowers produce (1, 2, and 3), only cyprosin 3 has a curdling effect similar to that of the animal proteinase chymosin, and its concentration varies according to the stage of florescence. Cheese making with the thistle flower has gradually been abandoned partly because the regional flora is unreliable, varying with weather and other environmental conditions. Today, in fact, most coagulants used in the cheese industry are produced synthetically.

Thistle Bloom and Jewish Culture

Evidence indicates that the Jews were the first to develop the practice of coagulating milk with thistle bloom. The dispersion of the Jews and their culture throughout the Iberian
Peninsula may account for the current geographical distribution of the use of thistle bloom in cheese making.

Cheeses prepared with animal enzymes were prohibited under the strict Jewish dietary laws, which forbade religious Jews to cook any animal’s meat in its mother’s milk or otherwise to mix meat with dairy products. Although the origins of this prohibition are obscure, the notion that animal enzymes were unhygienic or unhealthy may have gained credibility due to the undeniably bitter aftertaste of cheese made with animal enzymes. Furthermore, milk-fed animals were slaughtered in the spring; during the rest of the year, only dried portions of the stomach, available in limited quantity, could be used for curdling. Neither thistle bloom nor the milky sap of the fig tree were subject to dietary prohibitions; moreover, they were available throughout the year. For these reasons, the Jews may eagerly have adopted plant coagulants for the making of cheese.

The Jews maintained their cheese-making tradition during a period of history marked by their intermittent persecution. Their presence in Spain had first been noted in the first century B.C.; the Jewish presence in the cities of Tarragona, Tortosa, and Zaragoza dates back to the seventh century. But from the beginning of the Christian era until the eighth-century invasion of the Moors, the Jews were subject to persecution. The Muslim conquest, however, initiated a six-hundred-year period of peace and mutually beneficial coexistence, during which the Jews played an important role in the economic and cultural life of the Iberian Peninsula. In 1492, however, the Kingdom of Spain began its expulsion of the Jews.

Nevertheless, the practice of using thistle bloom as a coagulant in making cheese lingered in geographically isolated pockets where conversos (Jews who feigned conversion to Christianity) clandestinely maintained their customs. The Pyrenees, where conditions are very harsh, were probably a refuge for the Jews at this time. Later, in the seventeenth century, hundreds of thousands of Spanish Moors (moriscos), the last of the Muslim converts, were expelled from Valencia. This rich, cultivated region was plunged into terrible poverty, and it is likely that many Jewish conversos migrated there to fill the void left by the departure of the Moors. The same happened in the Balearic Islands.

Conversos fleeing the Inquisition also found refuge in Estremadura and its neighboring Portuguese communities, which suffered severe economic hardship throughout the Middle Ages due to the Mesta, a powerful cartel of cattle ranchers who held a monopoly on the rights of way and grazing rights for their herds. The Mesta subjected the region to a political isolation that reinforced its geographical isolation. The presence of the Jews in such villages as La Nava de Ricomatilla, Buenasbodas, and Aldeanueva de Barbarroya is evidenced by the carved Stars of David still visible on the lintels of some of the houses. Further south, the newly annexed Canary Islands, with their more liberal climate, attracted both Jews and Muslims from the Peninsula. These islands, which had long been home to the native Guanches (related to the nomadic Berbers of North Africa), provided a safe haven for small Jewish communities, such as Guía on Grand Canary Island.

Thistle-Bloom Cheeses Today

In isolated pockets of Spain and Portugal and, to a lesser extent, France and Italy, cheese is still made today with plant coagulants. These cheeses have a pronounced flavor and aroma, but none of the bitter aftertaste sometimes found in cheeses curdled with animal or synthetic enzymes. The flavor in the fully ripened cheese is well developed and slightly fermented; the texture is buttery. The curds of these cheeses are uniform in density and very smooth and creamy. Maturation does not alter these characteristics, but the flavor of the mature cheese is stronger. As the thistle cheeses mature, the fermentation process and the damp conditions used for ripening cause a viscous film to form on the surface of the outer rind. In some instances, the cheese actually liquefies during the cheese-making process and, when cut, literally spurts out of the rind like molten lava. This type of cheese is produced primarily in Estremadura, western Andalusia, and Portugal.

Little by little, however, the practice of using thistle bloom is dying out: some cheeses are being stripped of their essential properties; others are simply disappearing from the
market. The strictly enforced regulations of the European Union especially affect the production of local cheeses like Villalón or Pata de Mulo, a raw ewe’s milk cheese from Tierra de Campos; Burgos, also made from raw ewe’s milk; La Siberia, a raw goat’s milk cheese that is now virtually impossible to find; Cassoleta (see below); and Armada, an extremely rare cow’s milk cheese from León, made from colostrum, an entirely natural raw-milk product.

Catalogue: Thistle-Bloom Cheeses of the Iberian Peninsula

The Spanish Ministry of Agriculture, Fisheries, and Food has classified all domestic cheeses in order to monitor the area of production, manufacturing standards, ingredients, and quality controls. Listed below are the governmental designations or Denomination of Origin (DO), the official guarantee that a product is native to a specific geographical area. Two of the cheeses, Torta del Casar and La Serena, have seals protecting their specific DO. Cheeses are listed from east to west and from north to south (see map).

**Serrat.** An unpasteurized ewe’s milk cheese produced in small quantities in the spring in the remote mountains of Catalonia, Serrat is made from the high-fat milk of indigenous sheep. It is a very fatty cheese, shaped into a small, cylindrical form, with floral and geometrical shapes molded on the orange-colored rind. The body is dense (pasta cerrada or serrat) and bone-white in color; the flavor is strong. Serrat is matured for at least two months and for up to two years.

**Tupi.** The leftover curds of Serrat are used to make Tupi. The name “tupi” comes from the small, earthenware containers in which the curds were traditionally fermented, for up to three months, with a mixture of milk, brandy, and olive oil. Tupi has a sharp, strong, tangy flavor. It is now sold in glass or plastic containers.
Tronchón. Made from raw or pasteurized ewe’s milk, Tronchón is typical of the Alto Maestrazgo, the region between Teruel and Castellón. It is named for the village from which it comes (Tronchón), situated at 3,300 feet. The curds are pressed in an olivewood mold with decorative carvings, which gives the top and bottom of the cheese a concave shape, like a volcanic cone. Ranging in size from quite small to two pounds, Tronchón has a shiny, yellow rind and, occasionally, a mildly pungent, moist film on the outer rind. The body is dense, ivory-white in color, and buttery on the palate, and has a distinct, intense flavor that evokes the aroma of the pastures in which the sheep have grazed. Tronchón is referred to several times by Cervantes in Don Quixote; on one occasion, Sancho Panza’s wife, Theresa, bequeaths Tronchón to the Duchess.

Cassoleta or Puçol. Found on the eastern coast of Castellón and in parts of Valencia, Cassoleta was originally a goat’s milk cheese but is now prepared from a blend of goat’s milk and either ewe’s or cow’s milk. It is pressed in an olivewood mold (cassoleta) and shaped with one concave side (the shape is similar to that of Tronchón). Cassoleta is a fresh, very fatty cheese, sold in a brine solution. The chalky white body is soft and moist, and the cheese has a mild, salty taste.

Servilleta. Servilleta is made further south in the same region as Cassoleta or Puçol, near Llanera de Ranes, from raw or pasteurized goat’s milk. It is shaped by mounting the soft curds in a cloth or napkin (servilleta) and tying the four corners together at the top. This gives the cheese a cushion shape. The folds of the cloth leave marks on the top that radiate from a central “teat” created by the knot. Servilleta is a high-fat cheese of medium size, with a very thin, white skin, a soft body that is rubbery in texture but buttery on the palate, and a mild, slightly salty taste. Servilleta is ripened for one to several weeks.

Mallorquín. Made from raw or pasteurized ewe’s milk and similar to the cow’s milk cheese of Mahón (from Menorca), Mallorquín comes from the Balearic island of Mallorca. Medium in size, and traditionally molded in a cloth, which softens the angles of its brick-like shape, it has a smooth, orange-colored rind, which is rubbed with oil or lard. Mallorquín is a full- or extra-fat cheese, yellow in color, with a granular yet buttery consistency. The flavor is strong and slightly sharp. It is sold soft or semi-hard. In past centuries, Mallorquín enjoyed considerable fame in Italy. Italian ships sailing the Mediterranean were allowed to trade with the island in exchange for the purchase of a quota of cheese. The oiled rind helped to preserve the cheese from the damp sea air.

Sierra de Gata or Las Hurdes. Made from the milk of the black retinta goats, the Sierra de Gata cheeses are very similar to Acehuche. They are produced in the mountainous area of the same region, towards Salamanca.

Torta del Casar. Produced in Casar de Cáceres, a small town near the provincial capital, Torta del Casar is the prototype of thistle-curdled cheese and is much sought after by cheese enthusiasts. A high-fat cheese made with raw or pasteurized sheep’s milk, it is at its best in the spring. The curd is lightly pressed into a round, cake-like shape of medium height, which weighs less than two pounds. The outer rind is whitish, wrinkled, and cracked and has a mildly pungent film on the surface. The body is buttery and without eyes, the texture melting and especially runny in well-aged cheeses. Torta del Casar has an intense flavor and slightly overripe aftertaste. Recent studies have shown that the composition of the soil in the Estremadura pastures where the animals graze yields abundant milk enzymes that contribute to proteolysis and complement the thistle bloom.

Acehuche. Produced in the fertile lowlands of the economically depressed region bordering Salamanca, Cáceres, and Portugal, Acehuche is made with raw or pasteurized extra-fat goat’s milk. It is lightly pressed into a small, flat round and ripened to a mature or semi-aged state. The rind is rough, reddish-brown, and slightly pungent. The body is firm, without eyes, and light straw in color. The flavor is intense, and the cheese leaves a persistent, rank aftertaste.

Ibores. Produced in the northeastern part of Cáceres from the extra-fat milk of the black retinta goat that grazes the slopes of Ibor and Villuecas (and, in summer, at higher elevations in the Gredos Mountains), Ibores is a small cheese, usually matured to a semi-cured texture. The rind is yellowish and wrinkled and has the characteristically moist, viscous surface of thistle-curdled cheeses, but it is not smelly. It is sometimes rubbed with oil or dusted with Spanish paprika, which enhances both the color and flavor of the rind and helps to preserve the cheese. The body is compact and has eyes of varying size. Ibores is buttery on the palate and slightly sour. If the rind has been treated, it yields a hint of oil or paprika.

In recent years Ibores has become one of the best-known cheeses of Estremadura; the ease with which it is transported and stored has made it a favorite with the buyers who crisscross the region. Similar thistle-bloom cheeses can be found in the villages of the western foothills of the Toledo Range.

La Serena. This exceptional, extremely strong cheese is made in the Serena valley and the Castuera area of southern Badajoz, from the milk of the serena sheep. This milk is very rich and high in fat, and so is the cheese. It is shaped into a round and molded with a strip of woven esparto grass, which leaves a slight impression on the semi-hard rind.
The body is compact and has a few eyes, a greyish-yellow color, a melting texture, sharp taste, and an overripe aftertaste. The distinctive aroma becomes even more pungent with age.

**Pedroches.** Made in the northeastern part of the province of Córdoba, this cheese is similar to La Serena but has a milder flavor and aroma. Pedroches is made from the milk of merino sheep, which thrive in the three valleys in which the cheese is produced—La Serena, Pedroches, and Alcudia (in Ciudad Real). The extra-fat cheese is produced from either raw or pasteurized milk. Pedroches, which is sold either semi-aged or fully aged, is small or mediumsized. Its barrel shape bears the imprint of the esparto grass bands that mold it. The rind is yellowish and sometimes oiled, the body straw-colored and compact, with small eyes. It has a melting texture, a sharp taste, and a mildly pungent, persistent aroma. Pedroches is sometimes preserved in oil.

**Aracena.** Herds of white Andalusian goats graze in the hills of northern Huelva, and their very rich milk is used for this cheese. Aracena is small and cylindrical. Its rind is an orange-ochre color and has a somewhat pungent film on the surface. The body is fat or extra-fat and has eyes; its straw color turns brownish when the cheese is fully aged. Aracena is creamy but sharp on the palate, and its pungent aroma intensifies with age. It can be preserved in oil for up to two years.

**Andévalo.** Similar to Pedroches and La Serena, Andévalo is a ewe’s milk cheese produced further south, in Los Montes de San Benito, in limited quantity. It is formed into squat, cylindrical shapes and has a dry, brownish-orange rind, a compact ochre-yellow body with few eyes, a melting texture, mildly pungent aroma, and slightly overripe flavor that is pleasing to the palate.

**Serpa.** Similar to Andévalo, Serpa is produced in the nearby Portuguese village of Serpa. It is a sheep’s milk cheese, especially rich and creamy in the spring. Serpa is small and cake-like in shape, with a creamy texture, ivory color, and a cracked, golden rind. This cheese is often cured, which results in a darker color and a sharp, strong flavor.

**Queijo de Serra.** A ewe’s milk cheese made on the other side of the border, in the Portuguese Serra de Estrelha, Queijo de Serra is similar to, though larger than, Acehuche. It has a moist, melting body and a strong, overripe flavor. The rind has the thickened, resinous surface typical of thistle-bloom cheeses and exudes a distinct odor.

**Flor de Guía.** Flor de Guía is produced in the hills near Guía and Gáldar on the island of Gran Canaria. Originally an all ewe’s milk cheese, it is now blended with cow’s milk. The cheese is barrel-shaped and medium in size, with a dry, moderately hard, pale-yellow rind. The yellow body is compact, with small, elongated eyes. The cheese has a melting texture, with a distinct, well-developed flavor and a rather sour taste.

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**NOTES**
