honey

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https://doi.org/10.1093/acrefore/9780199381135.013.3145
Published online: 22 December 2015
This version: 17 September 2025

Summary

The origins of honey hunting and beekeeping are intertwined with mythology, with the first recorded honey collection by the Cunetes tribe in ancient southern Iberia. The Romans, notably through the writings of Columella, offer deep insights into honey production and processing methods. Varied classifications of honey were determined by ancient authors and included seasonal and regional distinctions, with the most highly esteemed types coming from thyme-rich regions like Mount Hymettus in Attica and Mount Hybla in Sicily. Honey was stored and transported in specialised containers like amphorae and honeypots. Recent archaeological studies have utilised organic residue analysis to detect ancient honey and wax residues, revealing insights into ancient beekeeping practices. Honey was further processed into products, such as hydromel and mulsum, and possibly used in fish preparations, highlighting its versatile role in ancient diets and commerce.

Keywords: honey, beekeeping, agriculture, agronomy, archaeology, food, animal husbandry

Subjects: Ancient Economy, Greek Material Culture, Science, Technology, and Medicine, Roman Material Culture

Updated in this version

Article rewritten and expanded to reflect current scholarship.

Honey: Origins

The discovery of both honey hunting (called *mellis collectio* in Latin) and apiculture is somewhat shrouded in mystery. The central texts for understanding the discovery of beekeeping are mostly connected with mythological inventors of each of these methods of animal husbandry. According to the Latin historian Justin (2nd century CE), who compiled an epitome of the history of the 1st-century BCE Gallo-Roman historian Pompeius Trogus, “the Cunetes, whose very ancient king, Gargoris, was the first to discover the practice of collecting honey, inhabited the mountain passes of the Tartessians, where tradition tells us the Titans fought a war against the gods.” This is the only “inventor” of this type of honey acquisition mentioned in ancient literature, with an unexpected location in the southern Iberian Peninsula. On the origins of beekeeping, see the entry on beekeeping.

Honey: Production

While the steps taken to process honey (Greek: *μέλι*; Latin: *mel*) are well known from the ancient sources, once produced by the bees from the archaeological record of beekeeping instruments, such as scrapers and presses, it is the literary record that best guides the interpretation of that evidence. The Roman agricultural author Columella is the best, and fullest, source for how Roman and, by extension, Greek beekeepers processed their honey (*RR* 9.14). His work is especially valid as it informs us about such strategies not only in Italy but also in his birthplace, Gades (modern Cadiz), in the southern Spanish province of Baetica, as well as North Africa.

Extraction of honey was carried out in several stages: in the first step, the honey was allowed to drain naturally from the combs; the honey so obtained was called *mel optimum* (the best honey); in the second stage, the combs were placed in small manual presses or sometimes in larger presses that were operated with rod and spindle to squeeze as much honey from the combs as possible. The honey produced in this second stage was called *mel secundum* and was considered to be of secondary quality.

Further quality subdivisions mostly related to place and season of production are known but were likely much more complicated in practice and likely varied a great deal regionally. While Columella describes his own subdivisions of honey produced in villa apiculture, it is from Pliny the Elder that the commercial divisions of honey that succeed the production process are known. Pliny breaks down honey production into spring honey (*mel vernum*) and summer honey (*mel aestivum*): *Mel vernum*—spring honey (Pliny, *NH* 11. 14. 34–35), according to Pliny, was less favoured and was more often left for the bees to eat. Pliny claims that some sources suggest that spring honey was the most nutritious but that the bees that consumed it would be stronger. By contrast, others claimed that spring honey was not produced during a time when thyme began to blossom, something that marked summer honey.

Other classifications are added by Columella, who suggested that two other subcategories of less preferred versions of the previously mentioned honey existed: *mel silvestre*—honey collected in the woods, collected in the first autumn rains; Columella (RR 9. 4. 7) considered it the worst quality, and it was preferably used for industrial purposes. The second was *mel villaticum*—honey from estates and farms (Varro *RR* 3. 16, 26; Columella *RR* 9. 4; Pliny, *NH* 11. 38, 42).

Honey Storage

Honey produced for self-consumption and surplus honey could be stored and/or shipped in a variety of vessels, some of which are mentioned in the ancient sources, but most are not.

Amphorae

Thanks to the graffiti and *tituli picti* occasionally marking shipping containers, it seems that sometimes medium-long distance transport containers were used for transporting honey. Some recovered amphora fragments are known from Pompeii, Sicily, and Proconsular Africa and in

Magdalensberg and Vindonissa (Switzerland) with *tituli* that indicate the transport of honey (sometimes of typified). For example, at Port-la-Nautique (Narbonne), an amphora of the "Cretan type 3" was found, dated from August to the beginning of the 3rd century, with the following inscription: "*Mel(lis) flos*," alluding to an excellent quality honey. In Pompeii, in the so-called Casa di Menandro, a small globular amphora with the painted indication "*mellis desp(umati)*" was found, a high-quality honey probably used in medicinal preparations. In the late Roman and Byzantine periods, amphorae with painted inscriptions alluding to honey are also known. This is the case of a fragment recovered in the Agora of Athens, dating from the 4th century CE, and a Byzantine amphora collected in Classe, in northern Italy, dating from the 6th century CE.

Honey Pots

Honeypots are containers specially adapted for transporting and conserving honey. These vessels are notable due to a particularly pronounced shoulder (rarely two) in the shape of a brim or "eyelash," generally placed at about one-third of the superior part of the vessel or near the mouth.[1]

Instrumenta domestica *(common ware)*

Instrumenta domestica are multifunctional containers or secondary re-usage without specific features that were used as a recipient to conserve honey, an identification derived from their graffiti and *tituli picti.*

Regional Honey Varieties and Ideal Apiary Locations in Antiquity

Just as in the early 21st century, many different classes of honey were known according to the forage plants of each region and from the time of year during which they were harvested. Several literary sources (Varro *RR*; Pliny the Elder *NH*; Virgil, *Georg*., and Columella) inform us that the most expensive honey (at least among Greek and Roman authors) was from the region of Attica (from Mount Hymettus), followed by Sicily (Mount Hybla: Varro, *RR* 3.16. 14; Pliny, *NH* 11.32). These two honey types were primarily thyme-heavy honeys (*mel thyminum*). Columella (*RR* 9.4.2 and 9.5.6) recommended that prospective beekeepers build their apiaries in areas rich in thyme and plant it around their hives. The honey produced in Crete, Rhodes, Cyprus, Africa, Corsica and certain regions of Italy, and the Iberian Peninsula was also quite appreciated, as is evident from Columella, from Gades, Baetica, in southern Spain.

It is partially based on these popular honeys that the bee forage recommendations of Columella, who, more than any other author, was concerned about apiary design and the impact of the floral environment on honey and wax production. Columella was also interested in which plants should be planted by a beekeeper near his apiary to (a) produce the most honey and (b) produce flavourful honey (9.4). According to Columella, certain wildflowers (9.4.4) could colour and flavour honey, and he recommended the presence of such flowers (*qui coloret odoretque mella*).

Detection and Analysis of Honey and Apicultural Products

Recent studies on ancient Greek and Roman ceramic vessels used as beehives[2] were critically important for revealing the potential of organic residue analysis, namely, the presence of wax and the ability to identify archaeological ceramics as being connected with apicultural vessels versus other uses. For the first time, scholars were able to decode the composition of fumigation materials used to smoke certain ancient ceramic beehives in Roman Portugal through chromatographic analysis.[3]

To get at actual the floral components potentially contained in residual honey has been a more difficult prospect because of the tenuous nature of its preservation on archaeological ceramics that have been disturbed and removed from their original positions. While organic residues, like wax, for instance, adhere more readily and penetrate more deeply into ceramic surfaces, making their detection persistently identifiable millennia after contact, carbohydrates, like honey, and what chance pollen it might contain that reveals the floral origin of that honey rarely persists, especially after cleaning. Thus far, the only studies that have been able to recover such information, have been conducted (a) in recent years, (b) in situ (i.e., in the context of the initial excavation), and (c) with a clear understanding of literature up to that point on the archaeology of beekeeping and thus an awareness of the care one must take in assessing apicultural products.[4]

What these groundbreaking, foundational studies emphasise is the need to focus palynological and other archaeometric efforts on (a) new excavations, especially in rural areas (but not only, see various instances of ancient urban beekeeping and the need to be vigilant for the appearance of apicultural products and operations even in bustling metropoles like Rome, Bracara Augusta, and Athens).[5] Apiaries, and comparative studies of apiaries from later in the premodern and modern period, will allow for a more comprehensive approach.[6] To test suspected ancient beehives and honeypots currently in European museums, for example, in Spain and Portugal or Greece, for the presence of honey would be a costly and unproductive endeavour as no studies have thus far demonstrated the persistence of honey residue in such later contexts, only *in situ* under certain conditions.

Further Processing of Honey

Honey was commonly processed further to create a range of products particularly marking Roman modes of consumption of honey. The following products are the best-known representatives of these further refinements. The nature of producing each of the preceding products is much less known, however.

Hydromel or aqua mulsa

Hydromel or *aqua mulsa* is a fermented alcoholic drink made of honey and water, usually in the proportion of one part honey to two parts water (although it could vary depending on the recipe or region of production).

Mulsum

Mulsum is a wine sweetened with honey, making it stronger and sweeter and allowing it not to lose its organoleptic qualities so easily; sometimes, the addition of honey could favour the preservation of weak wines and hide unpleasant flavours. These wines were normally consumed at the beginning of meals during the *gustatio*, as an aperitif and were very much in vogue in Augustus's time. Pliny the Elder (*NH*, 25. 84–85), regarding the use of honey in Hispania, refers to the excellent quality of a drink made with herbs and honeyed wine that was typically consumed at banquets and celebrations.

Fish Products

It is possible that honey was used in the preparation of fish preparations. This seems to suggest the presence of honeypots of local production identified in fish centres, such as the production centre of San Martiño de Bueu (Pontevedra) and the presence of ceramic hives, identified in the production centre of Martinhal (Sagres, south of Portugal).

Honey as a Sweetener

As the primary sweetener before the advent of sugar, honey naturally featured prominently in ancient cooking. This is especially prominent in the cookbook of the Latin author Apicius's de re coquinaria. Apicius includes honey in practically all his sauce recipes, in meat and fish courses, and in his vegetable dishes. Honey was also used in many Greek and Roman pastries. The type of honey used for the broad majority, however, while never specified, was most likely local honey.

Pharmaceutical Use

Aside from cooking, the most common use of honey was in the context of Greek and Roman medicine. Honey in Greek and Roman medicinal preparations was perhaps thought to strengthen drugs (Dioscorides 2.10). Columella (6.17.7) refers to the medicinal use of honey for ophthalmic diseases, healing wounds, poisonous snake bites, and poisoning by poisonous mushrooms. Seneca (De Clementia 2, 2) mentions the use of honey to fight headaches, diluting honey in cold rose water. The number of times one encounters such recipes precludes further summary here, but many further examples of the use of honey in medicine are best demonstrated in the work of Pliny the Elder; by comparison, see NH 22.106. See pharmacology.

Related Products and Uses

Besides honey, commercially raised bees also produced two further products of value.

Propolis

Prospolis is a natural resin bees collect from certain trees and use to cover and repair the openings in the hives, protecting them from the winter weather and covering the bees that die inside the hives to prevent contamination (Varro, *RR*. 3. 16, 23; Pliny, *NH*. 11.7. 6, § 16; 22.24, 50, § 107; Gellius 5. 3. 4; Dioscorides 2.84).

Wax

Wax is not a plant product but the result of the voluntary hive construction by bees. The Romans, and quite possibly the Greeks, thought that wax production could be stimulated by placing hives near certain herbs not necessarily liked by farmers but loved by bees, such as wild radish, wild turnip, wild endive, black poppy, and the field parsnip (*quae favorum ceras exuberant*; Columella, *RR* 9.4.5). Wax was an important product used for various uses such as the mummification of corpses, shipbuilding, bronze sculpture creation, metallurgy, and other craft activities, such as waterproofing wood, rope, or leather.

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Notes

1. On honeypots, see especially Manuel Delgado, “Potes Meleiros De Bracara Augusta *<https://ojs.letras.up.pt/index.php/Port/article/view/4602>*,” *Portugalia : Revista De Arqueologia Do Departamento De Ciências E Técnicas Do Património Da FLUP* 18 (August 1997): 149–166; Rui Morais, “Potes meleiros e colmeias em cerâmica: Uma tradição milenar *<https://repositorio-aberto.up.pt/handle/10216/148912>*,” *Saguntum* 38 (2006): 149–162; and Paolo Persano, “Etruscan ‘Honey Pots’: Some Observations on a Specialised Vase Shape *<https://doi.org/10.2307/j.ctv2b07txd.8>*,” in *New Approaches to the Archaeology of Beekeeping*, ed. David Wallace-Hare (Oxford: Archaeopress, 2022), 45–58.

2. Richard P. Evershed, “Organic Residue Analysis in Archaeology: The Archaeological Biomarker Revolution *<https://doi.org/10.1111/j.1475-4754.2008.00446.x>*,” *Archaeometry* 50, no. 6 (2008, December 1): 895–924. Cesar Oliveira et al., “Análise de fragmentos cerâmicos de potes meleiros e colmeias por cromatografia gasosa acoplada à espectroscopia de massa,” in *As produções cerâmicas de imitação na Hispania*, ed. Rui Morais, Adolfo Fernández, and Maria José Sousa (Porto, Portugal: Faculdade de Letras da Universidade do Porto, 2014), 599–610. For more recent discussions of this theme, especially palynology, see Lorenzo Castellano et al., “Palynological Insights into the Ecology and Economy of Ancient Bee-Products: A Contribution to the History of Beekeeping *<https://doi.org/10.2307/j.ctv2b07txd.8>*,” in Wallace-Hare, *New Approaches to the Archaeology of Beekeeping*, 59–78.

3. Particularly Oliveira et al., “Análise de fragmentos cerâmicos de potes meleiros e colmeias por cromatografia.”

4. See Mina Weinstein-Evron and Silvia Chaim, “Palynological Investigations of Tenth- to Early Ninth-Century BCE Beehives from Tel Rehov, Jordan Valley, Northern Israel *<https://doi.org/10.1080/01916122.2015.1115433>*,” *Palynology* 40, no. 3 (2016, September 1): 289–301; and Lorenzo Castellano et al., “Charred Honeycombs Discovered in Iron Age Northern Italy. A New Light on Boat Beekeeping and Bee Pollination in Pre-Modern World *<https://doi.org/10.1016/j.jas.2017.06.005>*,” *Journal of Archaeological Science* 83 (2017, July 1): 26–40. By comparison, see also Lorenzo

Castellano et al., “Palynological Insights into the Ecology and Economy of Ancient Bee-Products: A Contribution to the History of Beekeeping <https://doi.org/10.2307/j.ctv2b07txd.9>,” in Wallace-Hare, *New Approaches to the Archaeology of Beekeeping*, 59–78.

5. See Gerogios Mavrofridis, “Urban beekeeping in Antiquity,” *Ethnoentomology* 2 (2018): 52–61; Katie Tardio and David Wallace-Hare, “Pigs in the City, Bees on the Roof: Intra-Urban Animal Husbandry and Butchery in Roman Spain <https://doi.org/10.1007/978-3-031-06281-0_6>,” in *Reframing the Roman Economy: New Perspectives on Habitual Economic Practices*, ed. Dimitri Van Limbergen, Adeline Hoffelinck, and Devi Taelman (Cham, Switzerland: Springer International Publishing, 2022), 155–178; and Javier Martínez Jiménez, “Appiaria Vel in Civitate Vel in Villa: Apiculture in the Early Medieval West <https://doi.org/10.2307/j.ctv2b07txd.14>,” in Wallace-Hare, *New Approaches to the Archaeology of Beekeeping*, 159–171.

6. See João Caninas et al., eds., “MUROS-APIÁRIOS. UM PATRIMÓNIO COMUM NO SUDOESTE EUROPEU <https://www.altotejo.org/acafa/acafa_n3.asp>,” special issue, *AÇAFA On-Line* 3 (2010); Juaco López Álvarez, “Arqueología de La Apicultura En La Asturias Preindustrial <https://doi.org/10.2307/j.ctv2b07txd.19>,” in Wallace-Hare, *New Approaches to the Archaeology of Beekeeping*, 216–232; and Robert Chevet, “Approches de l’Archéologie: L’apiculture Insolite Du Nord de l’Espagne <https://doi.org/10.2307/j.ctv2b07txd.20>,” in Wallace-Hare, *New Approaches to the Archaeology of Beekeeping*, 233–252.

Related Articles

agriculture, Greek

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