

Olive tree basketry (*Olea europaea* L.): Description of objects and traditional rod selection in a contemporary collection

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Wild and cultivated olive trees are characteristic of the Mediterranean ecosystems and landscapes. They constitute an agricultural forest resource which has been deeply rooted in the Mediterranean culture, lifestyle and economy for millennia. Among numerous applications of olive trees, basketry is the only use that has not yet been systematically studied, and therefore, today, the use of olive tree wood for basketry is still quite unknown. This type of basketry is made after the branches are pruned from the trunk, applying specific techniques that require knowledge of the phenology, as well as the biological and reproductive cycle of the olive tree. The aim of our research has been to document the traditional knowledge about olive tree basketry in all its aspects, conducting field research and ethnobotanical interviews with 74 informants from 41 towns in southern Spain. Due to the scarcity of artisans and finished products, we focused on analysing a reference collection of 138 pieces kept at the Botanical Garden of Córdoba, manufactured by a local craftsman with expert knowledge about the whole process. This set is perhaps the only well-preserved collection of basketry made exclusively from olive tree wood in existence. Our work has, therefore, contributed towards safeguarding a significant heritage that might otherwise have been lost. Moreover, such a large amount of ethnobotanical and ecological information rooted in the past has considerable current scientific and cultural value.

Keywords: *Olea europaea*, Basketry, Traditional knowledge, Spain

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Olive sucker (*vareta*) basketry is one of the least known, yet most characteristic, rural handicrafts¹ produced from the suckers of olive tree, a species (*Olea europaea* L. subsp. *europaea*, Oleaceae) native to the Mediterranean region and widely cultivated, mainly for its fruits (olives) and the oil extracted from them. It is an evergreen tree, with great longevity, vigour and regeneration capacity. Its branches are greenish-grey and have opposite, decussate leaves along the stem^{2,3}. The wild olive [*O. europaea* var. *sylvestris* (Mill.) Lehr] is a wild variety also used for basketry. This variety is found widely in the Mediterranean and differs from the cultivated plant (var. *europaea*) in its small size, its often bushy and intricate branches, and especially in its smaller drupes, which always have a smooth pit, although there are many intermediate forms that are difficult to identify⁴⁻⁷.

Archaeological evidence⁸ and genetic studies⁹ suggest that this plant was already domesticated about

4500 years ago in the W Mediterranean and N Africa. It was the Phoenicians, Greeks and Romans (major producers, consumers and traders of olives and olive oil) who spread its cultivation throughout the Mediterranean region^{10,11}. Olive oil, an important food product, became even more popular due to its new uses for lighting, medicine and cosmetics (as a base for perfumes, soaps and ointments, among others). Nowadays, olive trees are grown on every continent. Spain is the largest producer of olives and olive oil in the world, with almost 50 % of the production¹², which is concentrated mainly in the southern region of Andalusia.

The use of the suckers (*varetas de olivo*) has been of particular interest in the Mediterranean culture. Suckers grow from the base of the olive tree trunk and are used mainly as rods in basketry^{13,14}. However, in the rest of the world there is little evidence of the traditional use of olive tree sucker rods in basketry. In Andalusia, in spite of the great historical extension of olive groves and the potential abundance of raw

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material, hardly any traditional objects remain. Olive tree rod containers, the most characteristic olive tree basketry products, were reused until they wore out or simply burned along with the pruning residues after each season, once their function of collecting and transporting harvested olives and grapes was fulfilled. Fire was considered to have a purifying effect on the rods, to prevent diseases in the olive trees that would affect oil production. Today we know of these archaic practices and objects primarily through the oral tradition, but they were never studied before their disappearance from the rural world. Except for isolated quotations about the existence of olive tree baskets^{13,14,15}, there are no specific previous studies of the production features of olive tree rod handicrafts, nor their manufacturing patterns.

We found an elderly artisan in the town of Posadas (Córdoba, Spain). Here, the cultivation of the olive tree is deeply rooted and has been documented since Roman times¹⁶, and a vestigial activity of olive tree basketry remains, using traditional methods and producing objects with contemporary uses, in utilitarian, decorative, artistic and ritual contexts. Like other handicrafts, it has seen a recent revival¹⁷.

The aim of our research has been to document olive tree basketry through the experience of one of the last living artisans who masters all the stages of the technique. We have also studied the collection, and described the objects and the characteristics of the olive tree rods used in the manufacturing process.

Methodology

The research was carried out between June 2013 and November 2016, as part of a wider study on olive basketry in 41 towns in southern Spain, where 74 informants from Andalusia have been interviewed. As regards the few remaining artisans and pieces, we have focused the interviews on one of them, a well-known artisan from the town of Posadas (Córdoba, Spain). The study analyses a collection of 138 objects made with olive tree rods by this local craftsman, who has manufactured a wide range of objects over the years in an attempt to keep alive to his traditional knowledge about olive tree basketry. The result of his production is a representative collection of the declining art of basketry, which is preserved in the Ethnobotanical Museum at the Cordoba Royal Botanical Garden. The artisan is an 81 yr-old farmer, a shepherd and basket maker with remarkable knowledge about traditional olive groves. We conducted exploratory, open and semi-structured

interviews^{18,19} with him during joint field trips and also during the artisanal process. Information was collected on all aspects of olive tree rod management (the process of selection, collection and preparation of olive tree rods), the objects he knows and manufactures (components, parts, manufacturing sequence and techniques), and their traditional and contemporary uses. The research followed the Code of Ethics of the International Society of Ethnobiology²⁰ and prior informed consent was verbally obtained from informants to participate in interviews, and to study their objects, images and recorded information.

Subsequently, a direct study of the objects, their description and the rods used in their production was carried out. In the absence of previous detailed studies on these type of objects, we observed the objects closely, a common technique in archaeological basketry studies^{21,22} and anthropological research^{23,24}. The parts, manufacturing process, as well as the number and thickness of the rods used were identified for each object (Table 1) with their primary (base, body, handles, cup and neck) and accessory or secondary (base wing, base support, lid, secondary handle) components, as shown in Fig. 1.

The objects were grouped according to a) their function and structure: containers (to contain; concave structure) and protectors (to protect; convex, concave-convex or hollow truncated cone structure); b) their components: *classes* (categories) and *types* of objects were identified according to their primary components (base, body, handles, cup and neck) (Table 2). The local names of the different types of objects and their uses are indicated, and the variable characteristics of the primary components are detailed: Base: circular or elliptical. Handles: 1 handle, 2 handles, no handles or secondary handle.

Results and discussion

Components and manufacturing sequence

The manufacture of the objects follows a patterned order (Fig. 1): 1st base (1, 2, 3, 4); 2nd body (6, 7, 10, 8, 9); 3rd cup (20); 4th neck (21, 22); 5th base wing (5); 6th base support (19); 7th lid (13, 14, 18, 16, 15, 17), and 8th handle (11, 12). This order influences the selection criteria of the raw material, requiring different rods quantities and thicknesses in each phase. The match between the type and quality of the raw material, and the specific part of the object where it is to be used is the first requirement¹³. The structure, components and size of the object influence the

Table 1 — Types of rods according to their thickness and use in the wefts and warps of the components of different kinds of objects

Classes	Components	Parts	Weft	Suckers
<i>Canasto, canasta, cesta, estera, enjugadera, pantalla, funda de vidrio</i>	Base	Base centre (1)	very thin, thin	medium, thick
		Base wall (2)	thin, medium	medium, thick, very thick
		Base closing (3)	thin, medium	medium, thick, very thick
		Base rim (4)	thin, medium	medium, thick, very thick
<i>Canasto, canasta, cesta, enjugadera, pantalla, funda de vidrio</i>	Body	Body initiation (6)	medium, thick	medium, thick
		Body wall (7)	medium, thick	medium, thick
		Body closing (8)	medium, thick	medium, thick
		Body rim (9)	Medium	medium, thick
		Body ornamentation (10)	Medium	medium, thick
<i>Canasto, canasta, funda de vidrio</i>	Handle	Handle (11)	medium	medium
		Handle connection (12)	medium	medium
<i>Enjugadera</i>	Cup	Cup (20)	thick	very thick
<i>Funda de vidrio</i>	Neck	Neck (21)	very thin, thin	medium
		Neck rim (22)	very thin, thin	medium
<i>Canasto, canasta, cesta, funda de vidrio</i>	Base wing	Base wing (5)	medium	medium, thick
<i>Canasto, canasta, cesta</i>	Lid	Lid centre (13)	very thin	medium, thick
		Lid wall (14)	medium	medium, thick
		Lid ring (15)	very thin	medium
		Lid rim (16)	medium	medium
		Lid connection (17)	very thin	medium, thick
		Lid ornamentation (18)	medium	medium, thick
<i>Cesta</i>	Base support	Base support (19)	medium	medium, thick
<i>Estera</i>	Secondary handle	Handle (11)	medium	medium
	handle	Handles connection (12)	medium	medium

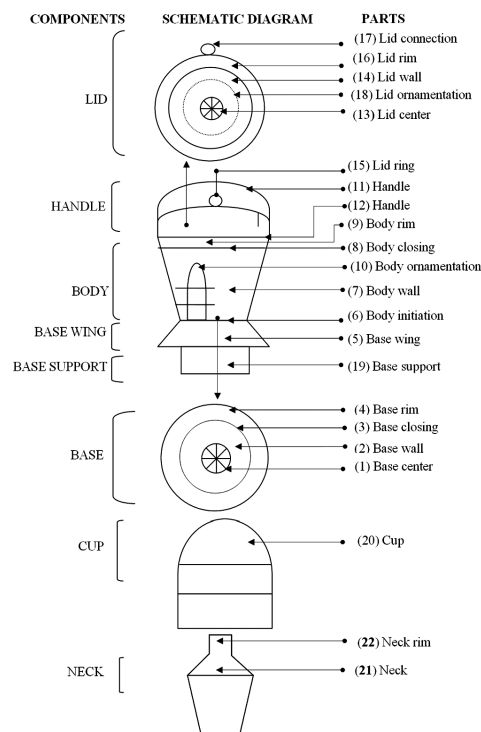


Fig. 1 — Schematic diagrams of some of the objects studied, indicating their components and parts. Primary components: *base, body, handle, cup* and *neck*. Secondary components: *base wing, base support, lid, secondary handle*. 1-21, names of the parts.

manufacturing phases, the number and diameter of the necessary rods, and will affect the final result and the efficiency of the object.

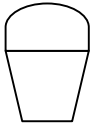
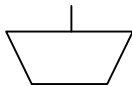
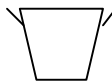
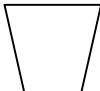
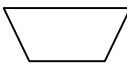
In the manufacture, stake and strand, twining and plaiting techniques have been commonly used. These techniques are influenced by the raw material itself, and are the most common in rod weaving in the Iberian Peninsula²³⁻²⁶.

Selection of suckers

The suckers are obtained from 5 olive tree varieties. The informant knows how to locate them and which of them produce the best rods. The optimum time for harvesting the highest quality sucker rods is between mid-August and mid-September, when the fruit has completed its growth and its fattening begins (Figs. 2a,b,c). Cutting the suckers from the base of the trunk (*desvaretao*; Fig. 2d) is also a crucial practice for optimizing oil production²⁷. Outside this period, the knots thicken and the suckers branch out, grow and are less flexible.

The suckers, once collected, are cleared of their buds, leaves and knots (Figs. 3a,b). They are left to dry 1-2 weeks (Fig. 3c) and are classified by thickness

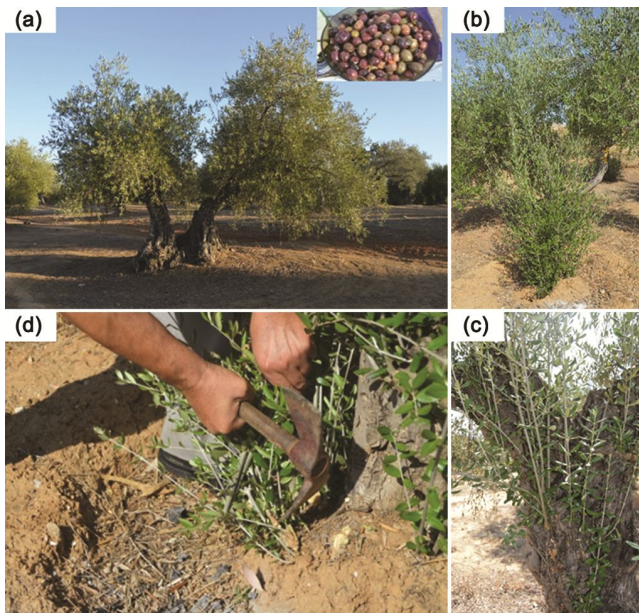
Table 2 — Description and classification of the objects in this study, schematically drawn and grouped according to their components and the characteristics of their structure.

Schematic diagram	Types. Description Groups. <i>Classes</i> . Basic components	Local names	Uses	Nº Artifacts n=138
	Type 1. Round <i>Canasto</i> Container. <i>Canasto</i> . Circular base, body, 1 handle.	<i>Canasto hortelano</i> <i>Canasto patatero</i> <i>Canasto de verdeo</i> <i>Canasto de aceituna</i> <i>Canastito de merienda</i> <i>Canasto de paseo</i> <i>Canasto de compra</i> <i>Canasto romero</i> <i>Canasto de pan</i> <i>Caracolera</i> <i>Cesto de ofrendas</i> <i>Huevero</i>	Harvesting vegetables and fruit Harvesting heavy agricultural products Harvesting green olives for dressing Gathering olives from the ground Carrying children's snacks on pilgrimages Walking bag Loading shopping Carrying food on pilgrimages Storing bread Cleaning/purging snails Transporting offerings in ceremonies Egg basket	4 7 14 1 3 7 6 2 1 1 1 12
	Type 2. Oval <i>Canasto</i> Container. <i>Canasto</i> . Elliptical base, body, 1 handle.	<i>Canasto de herramientas</i> <i>Esparraguero</i> <i>Canasto de niscalos</i>	Containing and transporting tools Gathering asparagus Gathering mushrooms	3 5 4
	Type 3. Oval <i>Canasta</i> Container. <i>Canasta</i> . Circular base, body, 2 handles.	<i>Canasta de colada</i> <i>Canasta de ropa</i> <i>Costurero</i> <i>Urna funeraria</i> <i>Cántara</i> <i>Dulcero, jabonera</i>	Straining and draining laundry washed with bleach Containing sheets and tablecloths Containing sewing tools and pieces Containing and transporting funeral ashes Containing water Sweets, soaps	1 1 7 1 1 3
	Type 4. Oval <i>Canasta</i> Container. <i>Canasta</i> . Elliptical base, body, 2 handles.	<i>Canasta de huerta</i>	Storing farm products	1
	Type 5. Oval <i>Cesta</i> Container. <i>Cesta</i> . Circular base, body, no handles.	<i>Panera</i> <i>Lapicero</i> <i>Costurero</i> <i>Florero</i> <i>Frutero</i> <i>Castañoero</i> <i>Joyero</i> <i>Fiambreira</i> <i>Vasero</i> <i>Cesta de ropa sucia</i>	Serving bread on the table Holding pencils Containing sewing tools and pieces Containing decorative flowers Containing fruit on the table Holding chestnuts Jewellery basket Containing and transporting food Protecting drinking glasses Laundry basket	8 1 2 1 3 1 1 1 2 1
	Type 6. Oval <i>Cesta</i> Container. <i>Cesta</i> . Elliptical base, body, no handles.	<i>Frutero</i> <i>Arca</i> <i>Cunita de niño Jesús</i>	Containing fruit on the table Storing clothes Containing a religious image	1 1 7
	Type 7. Oval <i>Estera</i> Protector. <i>Estera</i> . Elliptical base.	<i>Salvamanteles</i>	Beneath plates on the dining table	1
	Type 8. Round <i>Estera</i> Protector. <i>Estera</i> . Circular base.	<i>Capacheta</i> <i>Apartador</i>	Filtering oil in an oil press Protecting from the heat of a pan	1 2

(Contd.)

Table 2 — Description and classification of the objects in this study, schematically drawn and grouped according to their components and the characteristics of their structure. (*Contd.*)

Schematic diagram	Types. Description Groups. <i>Classes</i> . Basic components	Local names	Uses	Nº Artifacts n=138
	Type 9. <i>Enjugadera</i> Protector. <i>Enjugadera</i> . Circular base, body, cup.	<i>Enjugadera</i>	Protecting the brazier and drying clothes	8
	Type 10. <i>Pantalla</i> Protector. <i>Pantalla</i> . Circular base, body.	<i>Lámpara</i> <i>Árbol de navidad</i>	Concentrating the lamplight Christmas decoration	2 1
	Type 11. <i>Botellera</i> Protector. <i>Funda de vidrio</i> . Circular base, body, neck, no handles.	<i>Botellera, botellero</i> <i>Aceitera</i> <i>Perfumero</i>	Protecting glass bottles Protecting oil bottles Protecting perfume bottles	2 1 1
	Type 12. <i>Conservera</i> Protector. <i>Funda de vidrio</i> . Circular base, body, neck, 1 handle.	<i>Bote enfundao</i>	Protecting glass jars	1
	Type 13. <i>Damajuana</i> Protector. <i>Funda de vidrio</i> . Circular base, body, neck, 2 handles.	<i>Damajuana</i>	Protecting glass demijohns	2

Fig. 2 — Olive tree suckers; (2a)—Olive tree and table olives; (2b&c)—Sucker rods and branches in a young olive tree; (2d)—*Desvaretao*.

(Fig. 3d). Before being used to make the objects, they are soaked in water for several days.

The olive tree suckers are the main element in the objects in the collection we studied, and are used in the different parts of the object's components, either in the warp or frame, or in the filling weft (Table 1). Their selection is fundamental for the manufacture (Fig. 3e), due to their different properties (thickness, resistance, flexibility and regularity), which affect the

characteristics of the objects, their texture and their visual effect. Due to their hardness, they are always used whole, without tearing, as opposed to what is done with other plant materials.

Many parts of the human body and the temperature (heat) of the fingers are involved in making these objects (Figs. 3f,g), to “dome” the rods (fold, bow) to give shape and *dar voleo* to the body (spreading and opening it).

The craftsman selectively chooses the olive tree rods according to their thickness to be used in different parts of the pieces. Five different calibers have been identified in the raw materials of the 138 items (Table 1):

Very thin rods (1-2 mm), the tenderest and most flexible, these are the most commonly used for ties due to their resistance to twisting.

Thin rods (2.1-3 mm) are tender and very flexible, and are used to close and reinforce the components. They are used in the weft of base and neck, combined with very thin rods to tie the warps in the centre, and also in the lattice of the base.

Medium rods (3.1-4 mm) are the most commonly used rods in the objects in the collection (Fig. 3h). They are consistent but flexible, permit solid torsions in long bows such as the handles, and are also suitable for body and lid rims.

Thick rods (4.1-5 mm) are strong and not too flexible, and are used in the weft of two components:



Fig. 3 — Rod selection; (3a&b)—Sucker branches collected and cleared of knots; (3c)—Drying rods; (3d)—Classification by thickness; (3e)—Raw material for manufacturing; (3f)—Doming rods to twist a center; (3g)—Basket manufacturing; (3h)—Filling weft.



Fig. 4 — Uses; (4a)—Harvesting fruit; (4b)—*Canasto hortelano*; (4c)—*Canastos patateros*.

cup and body. They are easily arched, so they are used in the most open parts of the large objects.

Very thick rods (5.1-6.7 mm) are the least used, because they are very long, extremely hard and difficult to handle. They are only used in the warps of the base of larger objects and the cup of the brazier protector basket (*enjugadera*).

Description of objects and uses

The olive tree basketry objects we studied can be classified into two *groups* according to their general functions: containers and protectors, and seven categories or *classes* (Table 2): *canastos* (71 artefacts), *canastas* (15), *cestas* (30), *esteras* (4), *enjugaderas* (8), *pantallas* (3) and *fundas de vidrio* (7).

Considering the differences in the primary components of the 138 studied objects (circular or elliptical shape of the base, number of bodies, handles), 13 basic *types* were identified.

Canastos: Type 1 and Type 2

The most abundant and diverse objects, used mainly to collect and transport food products (Figs. 4a,b,c, 5a). They are characterized by having a base, body and one handle that is used to hold the object and empty its contents. The *canasto* baskets can be composed of up to 17 different parts (1 to 17,



Fig. 5 — Objects; (5a)—*Canasto de verdeo*; (5b)—*Canasta de colada*; (5c)—*Panera*; (5d)—*Capacheta*; (5e)—*Enjugadera*; (5f)—*Lámpara*; (5g)—*Botellero*.

Fig. 1). The shape of the base is the distinguishing feature of the container type, either circular (Type 1) or elliptical (Type 2). There are 59 artefacts of Type 1 and 12 Type 2.

Canastas: Type 3 and Type 4

These are similar to the above-mentioned baskets in their functions (collection, storage and transport), but are designed to withstand a heavier load than the *canastos*. Both hands are used to move them once loaded, and if very large, two people are needed (Fig. 5b). They have a base, body and two handles, and can be composed of 18 different parts (1 to 18, Fig. 1). The base can also be circular (Type 3) or elliptical (Type 4). There are 14 artefacts of Type 3 and 1 Type 4.

Cestas: Type 5 and Type 6

These exist in many sizes, and are mostly used to contain food (Fig. 5c), household objects or in rituals. They have base and body, without handles, and can be composed of 14 different parts (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 15, 16; Fig. 1). The base may be circular (Type 5) or elliptical (Type 6). There are 21 artefacts of Type 5 and 9 Type 6.

Esteras: Type 7 and Type 8

Objects with an insulating function, or intended for other domestic and even industrial uses (e.g., *capacheta*, used locally as a filter in olive oil presses (Fig. 5d). They are flat structures which can be composed of 6 different parts (1, 6, 7, 8, 9, 11; Fig. 1). They can be elliptical (Type 7) or circular (Type 8). There is 1 artefact of Type 7 and there are 3 Type 8.

Enjugaderas: Type 9

Unique objects of ancient origin and infrequent current use (Fig. 5e), which were used to protect the brazier and dry clothes on top of them. This object is largely unknown outside Andalusia¹³, and is manufactured by our informant with different variants. It has two bodies and a convex structure or cup (Type 9), and can be composed of 6 different parts (3, 4, 6, 7, 8, 20; Fig. 1). There are 8 artefacts of Type 9.

Pantallas: Type 10

Structures used to cover old lamps in the form of a hollow cone (Type 10; Fig. 5f), and can be composed of 6 different parts (3, 6, 7, 8, 9, 10; Fig. 1). There are 3 artefacts of Type 10.

Fundas de vidrio: Type 11, Type 12 and Type 13

Highly elaborate old traditional objects, used to protect glass containers from breaking, and therefore adjusted to their sizes and shapes. The most well-known are *damajuanas* (Type 13), but also *botelleros* (Type 11; Fig. 5g) and *conserveras* (Type 12) belong to this type of object. They are characterized by having two bodies, base and neck (bottleneck), and can be composed of 13 parts (1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 21, 22; Fig. 1). There are 4 artefacts of Type 11, 1 Type 12 and 2 Type 13.

Conclusion

It is exposed in this study the traditional significance of the art of basketry with olive tree suckers, which declining over the last forty years is significant, although the traditional importance of this kind of basketry in the areas of Spain where olive trees are cultivated is emphasized.

Olive tree suckers (*varetas*) constitute the essential structural element on which an archaic type of basketry with a long tradition in the South of Spain is based. However, it is scarce nowadays, having fallen into disuse and because most traditional objects were burned after each agricultural cycle. This craft is based on the knowledge and sustainable management of Mediterranean agriculture and wild ecosystems. Olive tree suckers are taken from the base of the olive tree trunk, and their use in basketry handicraft requires a prior selective collection, depending on the thickness, which influences their physical properties. Five types of suckers, optimally collected at the end of August, have been identified according to their diameter and properties. Before using the rods, it is

necessary to remove leaves and knots, and then straighten, dry and soak the rods.

All the olive tree basketry objects we studied were classified into two groups according to their general functions: containers and protectors. Among those classified as containers, three categories of objects were identified (*canastos*, *canastas* and *cestas*), and four were identified among the protectors: *esteras*, *enjugaderas*, *pantallas* and *fundas de vidrio*. The variations observed in some of the primary features of the components (circular or elliptical shape of the base, number of bodies, and handles) in the above-mentioned categories led to the definition of 13 basic types of objects. The most variable and widely reproduced of these is the circular *canasto* basket.

The combined use of the different types of rods is the norm, although some of them, because of their thickness, strength and flexibility, may have limited use (restricted to certain types of objects or some of their parts). The utility of the objects we studied is highly diverse, and 44 different types of uses have been recorded (mostly domestic and, to a lesser extent, productive, recreational or ritual). Olive tree suckers permit a successful application of traditional manufacturing processes to contemporary objects (suitable for current needs in modern society), especially in the domestic sphere where they can serve as utilitarian, decorative and artistic objects. The interviews and detailed analysis of the pieces, as well as our active participation in all the phases of this basketry, have allowed us to collect a large amount of ethnobotanical and ecological information with archaic roots, of an immense scientific and cultural value and current utility which would otherwise have been lost forever.

We believe that this may be the last surviving homogeneous collection made exclusively with olive rods.

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