

Early Evidence for the Culinary Use of Squash Flowers in Italy

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A famous painting entitled *The Fruit Seller (Fruittivendola)* painted in 1580 by Vincenzo Campi located in the Pinacoteca di Brera, Milan, depicts an elegant lady vender with a lapful of peaches holding a bunch of black grapes presiding over more than a dozen different fruits and vegetables for sale (Fig. 1), including several cucurbits. A large yellow, oblate, ribbed pumpkin (*Cucurbita pepo* L. subsp. *pepo* Pumpkin Group) supports a plate of apricots. A basket with a handle, filled to overflowing, contains a number of black-green, warted, spherical to oblate, deeply furrowed, orange-fleshed cantaloupes (*Cucumis melo* L. subsp. *melo* Cantalupensis Group). On the far right at the edge of the painting is a box shared by small red pears ('Moscatelle') and flower buds of *C. pepo*. Except for the pink roses clearly distributed for decorative purposes, among fava beans in a large woven basket in the right foreground, there is no doubt that all of the items on display were intended for culinary purposes. The squash flower buds are clustered and stacked together and to the right appears to be some young, tender foliage, suggesting that these too must have been intended as kitchen items.

The culinary use of the fruits is, of course, by far the most common and economically important use of the highly polymorphic *C. pepo*, which includes a number of diverse forms known as acorn, cocozelle, crookneck, scallop, straightneck, vegetable marrow and zucchini squash, as well as various pumpkins (Paris 2001). The culinary use of flowers, staminate as well as pistillate, on the day of, or day after anthesis is fairly widespread today in Italy and other countries and may have been practiced by Native Americans before the European encounter. Young, tender cucurbit foliage is also consumed in some regions.

Both staminate and pistillate flower buds are included in Campi's painting. The largest ones, towards the left of the box, appear to have been harvested on the day prior to anthesis (Fig.

2). Depicted also, at the near edge of the box, are what appear to be several younger pistillate flowers, what would be referred to today as “baby” or “mini-vegetables.” This use of pre-anthesis flowers differs from the more familiar use of *C. pepo* flowers on the day of anthesis or one day post-anthesis (Fig. 3).

The pistillate flowers in Campi’s painting are of interest in the context of the history of *C. pepo* cultivar-groups. The largest of the flowers, harvested on the day before anthesis, has a curved ovary that is prominently ribbed and approximately one-fourth longer than the corolla. The ovary is cylindrical but not uniformly so, and its greatest diameter appears to be fairly close to its broad attachment to the calyx. The diameter of the ovary at that point is less than one-third the length of the ovary, allowing for the curvature and 2-dimensional representation. The smaller ovaries, at the front of the box, have a similar overall profile, though proportionally even narrower and longer. Apparently, these flowers were taken from a form similar to the extant cultivar ‘Romanesco’, also known as ‘Costata Romanesca’, of the Coccozelle Group. ‘Romanesco’ is strongly ribbed and grown to this day in Italy for the consumption of its flowers. Its distillate flowers are especially adapted for this purpose; the calyx has a broad, strong attachment to the ovary and, therefore, does not easily slough off.

Fruit shape is quite variable in *C. pepo* and, as a characteristic under polygenic control, should be a good indicator of genetic relationships among cultivars (Paris, 1986). This reasoning has been confirmed by evidence obtained from DNA sequence polymorphisms showing that *C. pepo* cultivars group largely according to fruit shape (Ferriol et al., 2003; Paris et al., 2003). Accordingly, the common name “zucchini,” often applied in the U.S. to all young, green squash of *Cucurbita* regardless of shape, is best applied only to those having the shape of the first-described cultivars bearing the name ‘Zucchini’, which is uniformly cylindrical. Collectively, then, the cultivars bearing fruits of uniformly cylindrical shape comprise the Zucchini Group, the origin of which can be traced to the turn of the 20th century in northern Italy (Paris, 2001). Two other groups having more-or-less cylindrical fruits are the Vegetable Marrow Group (short, dumpy fruits) and the Coccozelle Group (long, bulbous fruits), both of which are considerably older than the Zucchini Group, as indicated by historical records (Paris, 2001) and confirmed by DNA polymorphisms (Ferriol et al., 2003; Paris et al., 2003). Although both cocozelles and zucchinis are long fruits with a length-to-width ratio of at least 3.5 (Fig. 4), the two groups are not intimately related, instead, cocozelles are more closely allied to the pumpkins, which have

round fruits. In many countries, zucchini cultivars with bush type vines have replaced the previously grown vegetable marrows and cocozelles by being longer than the former with less tendency to curve than the latter (notice the curvature of the ovary of the large pistillate flower in Figs. 1 and 2); the regular fruit shape of the zucchini, together with its typically overall rich, dark green color, resulted in its replacing the older groups in many markets (Paris, 1989).

The previously earliest known description and depiction of the cocozelles were the account by Jean Bauhin, published in 1651, and several illustrations by A. N. Duchesne in 1770 (Paris, 2001). If our interpretation is correct, this painting by Campi is the first evidence of the existence of cocozelles in the 16th century.

The *C. pepo* cultivar-groups Pumpkin [first illustrated 1542], Scallop [1554], Acorn [1562], Vegetable Marrow [1566], Crookneck [1586], and now Cocozelle [1580] are found in botanical tomes and/or in paintings before the close of the 16th century (Paris, 2001; Figs. 1 and 2). It has been generally accepted that the pumpkins, scallops, acorns, and crooknecks had all originated and diversified in North America. By far the greatest diversity of cocozelles occurs in Europe and it had been suggested that the origin of this cultivar-group (and that of the vegetable marrows) was probably European (Paris, 1989). However, the discovery of a cocozelle image in Europe as early as 1580 calls into question whether this group was an Italian invention or a Mexican one. Perhaps seeds of a primitive ribbed Mexican landrace pumpkin variable for fruit shape, such as PI 442294, had been brought to Italy shortly after the initial European contact with the Americas, and the Italians, during the 16th century, selected for longer fruits, to better suit the culinary preparation of the pistillate flowers and young fruits (Paris, 1989). Campi's painting and other still-lives by Italian artists also lead us to ponder whether there would be a better chance of finding greater diversity of cucurbits in Italian paintings than has been found in Dutch ones (Zeven and Brandenburg, 1986), due to the milder climate of Italy that is more suitable for growing cucurbits.

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FIGURE LEGENDS



Fig. 1. *The Fruit Seller* of Vincenzo Campi, 1580; note the box near the upper right edge of the painting containing pears and flower buds of *Cucurbita pepo*.



Fig. 2. Close-up of the box containing pears and flowers buds of *Cucurbita pepo*.



Fig. 3. Zucchini female flowers, one day post anthesis, for sale at a market in 2004 in Khandia (Chania), Crete, Greece.



Fig. 4. Young fruits of five cocozelle (left) and three zucchini (right) cultivars (after Paris, 2001).