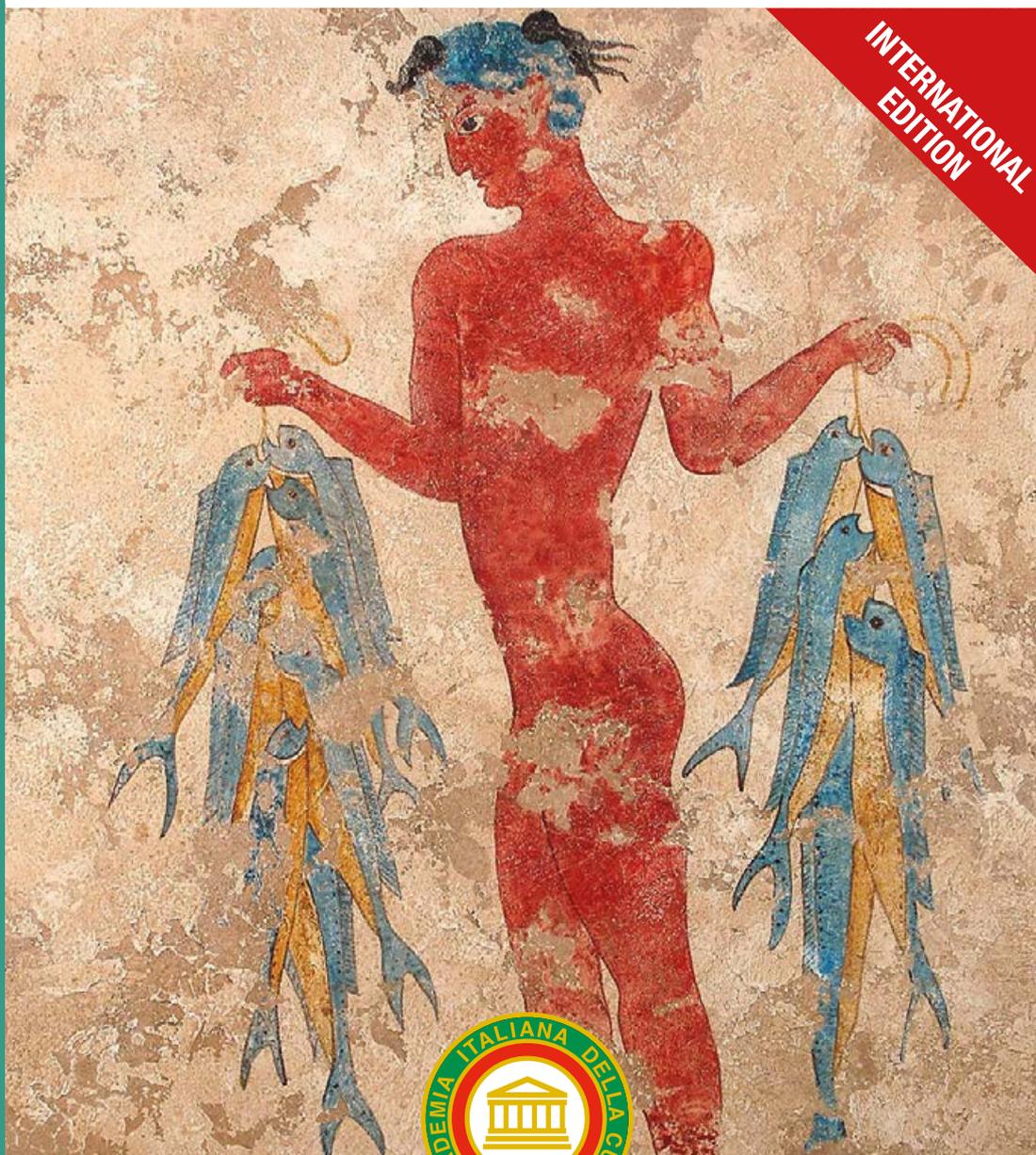


# CIVILTÀ DELLA TAVOLA

ACCADEMIA ITALIANA DELLA CUCINA

INTERNATIONAL  
EDITION



**ACCADEMIA ITALIANA DELLA CUCINA**  
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**EDITOR IN CHIEF**  
PAOLO PETRONI

**COPY EDITOR**  
SILVIA DE LORENZO

**LAYOUT**  
SIMONA MONGIU

**TRANSLATOR**  
ANTONIA FRASER FUJINAGA

**THIS ISSUE INCLUDES ARTICLES BY**  
ATTILIO BORDA BOSSANA,  
PAOLO PETRONI,  
MORELLO PECCHIOLI,  
GIANCARLO SARAN,  
ROBERTO ZOTTAR.

**PHOTO CREDITS**  
ADOBE STOCK.



**PUBLISHER**  
ACCADEMIA ITALIANA DELLA CUCINA  
VIA NAPO TORRIANI 31 - 20124 MILANO  
TEL. 02 66987018 - FAX 02 66987008  
PRESIDENTE@ACCADEMIA1953.IT  
SEGRETERIA@ACCADEMIA1953.IT  
REDAZIONE@ACCADEMIA1953.IT  
WWW.ACCADEMIA1953.IT



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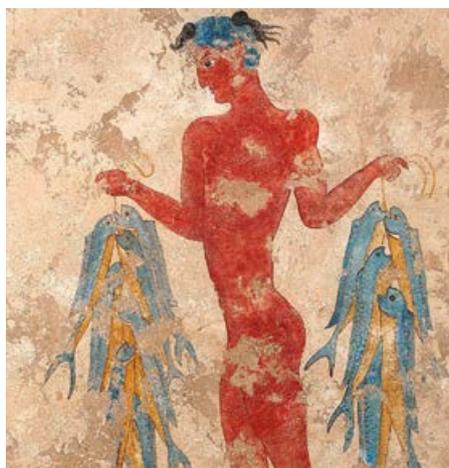
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E DA LUIGI BERTETT, DINO BUZZATI TRAVERSO,  
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GIAN LUIGI PONTI, GIÒ PONTI, DINO VILLANI,  
EDOARDO VISCONTI DI MODRONE,  
CON MASSIMO ALBERINI E VINCENZO BUONASSISI.



**On the cover:** graphic elaboration of a *Minoan fresco depicting a fisherman*; Akrotiri, Santorini, 1650 B.C.

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# The Academy's birthday gifts

*A prestigious book  
and a splendid stamp.*

**by Paolo Petroni**  
*President of the Accademia*

**T**opping off the Academy's activities and initiatives marking our seventieth anniversary, the event scheduled for 29 July at the Diana Hotel in Milan is a fundamental milestone for our birthday celebrations. On that occasion, as anticipated by last month's Focus, the new **Seventy-Year Manifesto** will be presented to the press. It is enclosed in this issue of the magazine, as promised. I ask you to read it and keep it as a guide to the Academy's activities in years to come. Two more works will also be presented at the Diana Hotel press conference.

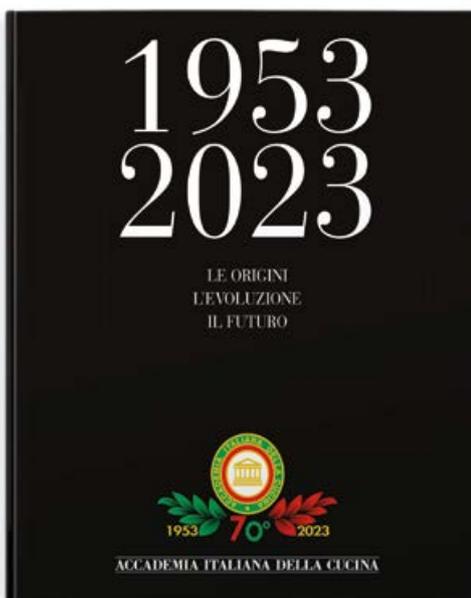
## *A volume on the Academy's seventy-year story*

A handsomely bound 200-page volume titled **1953-2023 Le origini-L'evoluzione-Il futuro** (1953-2023: *Origins - Evolution - The Future*) contains a wealth of information and photographs, often previously unpublished, on the Academy's foundation and founders; it also gathers a series of interesting articles on current events and the prospects facing Italian cuisine. An enjoyable read and source of reference, it will be gifted to government bodies and sent to all Academicians. All our new and future

members will also find this book within their welcome pack. We will then present the new **postage stamp** which the **Ministry of Enterprises and Made in Italy has issued in honour of our anniversary**. With our contribution, the State Mint and Polygraphic Institute has created a beautiful depiction of our annual theme, with our logo and the words **"A difesa della civiltà della tavola italiana"** ('Defending Italian food culture'). It will become available throughout Italy from 29 July. I warmly invite all our Academicians to purchase it, both as a souvenir and for use on postcards and other correspondence to friends and relatives. We suggest that Academicians abroad without plans to visit Italy ask their contacts in Italy to buy it for them.

## *The postage stamp will be available from 29 July*

The stamp, belonging to the series **"Italy's artistic and cultural heritage"**, has B-class value, currently 1.10 euros, and is valid for postage within Italy. Ministerial directives forbid us to reproduce it before it is officially unveiled, but we shall present it in the next **special edition of the Newsletter** to be sent soon after the Academy's birthday.





# The Founding Father

by **Giancarlo Saran**  
*Treviso Academician*

*Homage to Orio Vergani  
seventy years after  
the birth of his 'creature'.*

**O**rio Vergani was undoubtedly one of the most talented sons of the 'short twentieth century', though he was born at the tail end of the nineteenth, on 6 February 1898, in Milan, to a mother from Friuli. He had, as often happened in those days, troubled beginnings: losing his father at a young age, he was raised by his maternal uncle, **Guido Podrecca**, an eclectic figure and scintillating journalist who founded one of the era's most irreverent periodicals, *L'Asino* (*The Donkey*). Vergani

followed his uncle on various editorial pilgrimages to Friuli, Emilia and Tuscany, finally settling in Rome, where he soon learned how to reconcile talent and passion with daily necessities. As a stripling with no knowledge of stenography, he introduced himself to the editors of *L'Idea Nazionale* as a seasoned stenographer. There were no digital qualifications then; one's word and alertness were generally taken at face value. The young Vittorio, remembered by history as Orio, immediately found his bearings. The standard procedure was for provincial reporters to come into the office to dictate their articles about local events. But with his cast-iron memory and well-tempered imagination, Orio, ostensibly a silent recorder of others' words, would spin those accounts into newsworthy pieces rather than dry re-

ports to be skimmed before moving on. Years later, his son **Leonardo** recalled that "those twenty lines became a column; correspondents, then paid by the line, wouldn't object and happily accepted higher earnings". The acclaimed journalist and author **Indro Montanelli** recalls: "Before long he had risen from anonymity and earned his wings as a general assignment reporter". Transferring to the editorial office of the cultural weekly *Il Messaggero della Domenica*, he met such major literary figures as **Luigi Pirandello** and **Grazia Deledda**: intense experiences for a fellow in his early twenties.

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*With his gift for writing  
he created "veritable  
animated photographs".*

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In his memoirs, the future father of the Academy confirms the diagnosis by the Nobel-winning poet **Eugenio Montale**, who credited him with a gift for writing "veritable animated photographs". Visiting the home of the philosopher **Giovanni Gentile** to request minor changes to an article, "the fragrance of vegetable soup seeping under the door", he was cordially invited to share the family's meal as if they had known each other for an age, and served soup by the philosopher himself. After the meal, the dishes were moved aside and the article was nonchalantly tweaked.

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*Settling in Milan with  
the Corriere della Sera*

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From his adoptive home in Rome, he returned to his hometown, Milan. In 1926, becoming editor of *Corriere della*



Sera, **Ugo Ojetti** decided to inject new talent into the newspaper's personnel. The new arrivals included **Paolo Monelli** and Orio Vergani, who in some ways became a pioneering photojournalist. His output included **reports on twenty-five Giri d'Italia and as many Tours de France**. The inevitable barb from Montanelli, then a youthful colleague: "He knew everything except who was the day's winner, because along the road he had stopped in a *trattoria* to sample the local delicacies". These early foreign forays ignited a flame within Orio Vergani, making him ponder how Italian cuisine, or rather the wondrous variety of cuisines found all along our narrow peninsula, needed bolstering against several decades of encroachment by our imperious transalpine cousins. The time was not yet right, however. Meanwhile, our formerly stenographical Orio honed his weapons, or better, his cutlery. In the mid-Twenties, **Milan roiled with social and economic development**. Youthful dreamers and seekers gravitated towards it in search of self-realisation and a brighter future than they could find in their provincial hometowns.

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### *Birth of the Bagutta Group and its eponymous prize*

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This was the cradle of the '**Bagutta Group**' of young writers and artists, later honoured with a citation in his *Modern Dictionary* by **Alfredo Panzini**, one of the most scrupulous documenters of nascent Italian modernity. Periodically meeting round the table, these new arrivals in Milan could compare experiences over delicious victuals. Among them was **Riccardo Bacchelli**, a native of Bologna remembered for his novel *Il Mulino del Po* (*The Mill on the Po River*). Half-way between Milan and Rome lies Tuscany, whose cuisine was rapidly spreading in those days, with restaurants characterised by simplicity, substance and affordability. It must surely have been Bacchelli himself who first sniffed out the Bagutta restaurant, whither the



others eagerly followed. It was 1926 and the Pepori family from Fucecchio had recently established themselves in Milan, preceding their fellow townsman Indro Montanelli by a few years. **This recently transplanted family immediately bonded with the youngsters 'seeking a home of their own'**. The kitchen was visible to diners, not for fashionable reasons as would happen eighty years later, but by mere 'logistical' necessity. For a certain period, those tablefuls of artists and literati were served by the waiter-bookseller **Ugo Bernardini**: as briskly as he'd once peddled books, now he trotted between tables at the Bagutta. **It was in this climate that the conditions arose for the birth of Italy's oldest literary prize: the Bagutta**. This idea inevitably found a fulcrum in Orio Vergani, who animated and spearheaded it.

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### *Founding the Academy*

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Vergani kept clocking up miles and emotions travelling the world, churning out over twenty thousand articles and over twenty published volumes, but with a gastronomic *fil rouge* running alongside his wanderings, as aptly described by **Marco Guarnaschelli Gotti**. "Gastronomy wasn't his preponderant interest, but a curiosity that kept emerging into his reports as a side dish, a note of colour,

a splash of culture". After his *Tour de France* experiences had allowed him to taste and witness how French culture values its gastronomic aspect, the contrast with his own country made him realise that **urgent attention was necessary** nationwide. According to **Luigi Volpicelli**, a friend from his youthful Roman days, "Arriving as a 'wandering tourist', he was aghast when waiters in the highly civilised Veneto offered him Milanese cutlets and could not understand his eagerness to try *luganeghe* sausages from Treviso, while the innkeeper from Conegliano hurriedly brought forth Tuscan wines and not local ones from the banks of the Piave". Around the same time, another future founder of the Academy, **Dino Villani**, invited him to taste pumpkin *tortelli* in Suzzara, near Mantua. He was entranced. **"Why don't we found something which gives value to our cuisine?"** Villani, a master communicator, 'brainstormed' with him. Calling it 'Academy' would be perfect: the ideal synthesis between the pleasures of the table and the cultural dimension. They delved into the details. Italian identity should be right alongside the term 'Academy', and 'Cuisine' would stand for the amazing abundance of products and recipes which vary from one parish to the next. **The time was right, by then**. In February 1953, Vergani set out his project in black and white in the weekly *L'Illustrazione Italiana*. "It is necessary to found a Gastronomic Academy to point us along the venerable paths of Italian culinary art". No gathering of "jovial revellers" this, but of "discerning palates" who might contribute, by bolstering Italian cuisine, to strengthening the already solid foundations of the vast historical, traditional and cultural heritage in which Italy has been immersed since time immemorial. Once again, Vergani proved himself a consummate architect of projects and interpersonal relations, armed with a talent for subtle irony which never left him. This was borne out on 29 July 1953: the Italian Academy of Cuisine's foundation date. Orio Vergani was named President by general acclaim.

**Giancarlo Saran**



# Buon Ricordo: good memories on a plate

by Attilio Borda Bossana

Messina Academician

*Among the numerous ideas gushing from Dino Villani's brilliant mind was a keepsake to remind gastronomic adventurers of splendid meals past.*

**1** 25 years ago, **Dino Villani** was born; seventy years ago, he and **Orio Vergani** founded our Academy. Villani, a publicist, painter, engraver and art critic, is **considered the inventor of integrated communication** and also, **in spring 1964, created the Unione Ristoranti del Buon Ricordo**: the Good Memory Restaurants' Union which for over half a century has led seekers on a voyage through the flavours and lore of Italian cuisine.

Twelve were the restaurants that founded the Union in April 1964 at the Milan Press Club; in the late Sixties, Villani, its founder and first president, saw membership double, until by the late Seventies almost a hundred restaurants had joined. **Today the Union includes 108 restaurants, 10 of them abroad**, sharing the goal of safeguarding and strengthening the extraordinary mosaic of Italian culinary traditions, representing typical and characteristic recipes throughout Italy and beyond.

*The plates are made of raw clay from the Ogliara clay quarry*

The plates are made of raw clay from the Ogliara clay quarry, **a few kilometres away from Vietri**, kneaded with water and strained until it is dry, supple and bubble-free. The plates made from it are left to dry further and given a first firing

at 100 degrees. The resulting *cotto* (terracotta) is glazed and then **decorated by the *spolvero* (dusting) technique used in old frescoes**, whereby a trace of charcoal dust is transferred on to the plates as a guide. After painting, the second firing definitively fixes the vivid colours chosen to represent whichever local delicacy calls to mind the restaurant and its speciality. Indeed, Villani's idea was precisely **a keepsake allowing travellers to retain the 'good memory'** (*buon ricordo*) of a gastronomic adventure they must not forget.

Thanks to the Academy's efforts, regional cuisine is no longer ignored or neglected; instead it is held in high regard by nutritionists, dieticians, historians and especially diners. However, the Buon Ricordo restaurants' contribution is important for **strongly associating locations with food and wine culture**, fostering a living, dynamic experience whereby change and creativity **remain coherent with local cultural history**, and thus defending and disseminating high standards for restaurants in Italy and abroad.

*The invention of the Easter 'dove cake'*

Villani was born in Nogara, near Verona, and spent his youth in Suzzara, near Mantova. In 1930 he moved to Milan, dedicating himself to advertising and reaping professional success by collaborating with the billboard masters of the time: **Gino Boccasile, Marcello Dudovich** and **Leonetto Cappiello**. In 1934 he became advertising director of the Motta sweet company, creating the celebrated 'M' logo adorning Christmas *panettone* and inventing, as he expressed it, "an organised, systematic, overarching





production strategy encompassing shape, name, ingredients and, especially, distribution”, using a similar dough and the same machines as *panettone* to produce *colomba*: the Easter ‘dove cake’ that swiftly became a national tradition. Answering a question from **Giovanni Ballarini**, then Vice-President of the Academy and President of the Franco Marengi Study Centre, about his Easter brainwave, Villani declared that: “**In order to retain vitality, cuisine and pastry-making must interpret and satisfy the desires, even unconscious ones, of a society undergoing constant, ever-faster change**, incessantly craving novelty and variety which only industry can provide by offering new products and also reinterpreting older, traditional goods and models. In that sense, the *colomba* can even be considered an Easter interpretation of the Christmas *panettone*”.

### Sicilian specialties depicted on ceramic

*Buon Ricordo* plates are hand-painted by artisans in Vietri sul Mare, a town long renowned for its ceramics. Over the years, the plates became collector’s items, and **they continue to depict iconic local specialties**. In 1977, several collectors founded the Buon Ricordo Collectors’ Association, uniting those who retained ‘good memories’ of local fare sampled on their travels throughout Italy. In Sicily, the

first Buon Ricordo adherent was **Alberto Sardella**, whose now vanished restaurant, called Sporting, had four plates currently coveted by collectors, making Messina the earliest Sicilian stop on the ideal journey through the flavours and colours of Italian cuisine.

That restaurant’s first *Buon Ricordo* plate, used from 1968, depicted *braciolo di pesce spada* (swordfish rolls), modified in 1970 to portray *braciolettine alla messinese* (Messina-style rolls); then, from April 1978 to December 1991, after the two Sporting versions, production under the restaurant’s new name, Alberto, began from 1985, its theme being *braciolo di pesce spada alla brace* (grilled swordfish rolls). The sea on its early specimens has more numerous, more detailed waves. The next plate, made from December 1991 to October 1992, represented *filetto di pesce spada in carpaccio alle erbe* (herbed swordfish carpaccio): the ‘91 version has a green fish, which became white in ‘92. Following a fire in late 1992, a series marked ‘93 was briefly made and distributed by the restaurant, located on Mortelle beach, Messina; the last plate, made from January to April 2002, depicted *stoccafisso alla messinese* (Messina-style stockfish). Three more restaurants in Sicily then joined the Buon Ricordo group: their plates depicted *zuppetta del nonno Filippino* (grandpa Filippino’s soup) from Filippino in Lipari; *tortino di alici* (anchovy patty) from La Siciliana in Catania; and *scaloppine di cernia agli agrumi* (grouper cutlets with citrus

fruits) at the Hotel Moderno in Erice. **Eight new plates have been created for as many restaurants joining in 2023: *delizia al limone*** (Lemon Delight) for Antico Francischiello in Massa Lubrense (Naples); ***Gaetano’s spaghetti alla Corte d’Assise alla vecchia maniera*** (old-fashioned Court of Assizes spaghetti) for La Cascina 1899 in Roccella Ionica (Reggio Calabria); ***spaghettino “Cavalieri” con arselle viareggine*** (‘Cavalieri’ angel hair with Viareggio wedge clams) for La Tecchia in Pietrasanta (Lucca); ***grancevola femena*** (she-crab) for Al Colombo in Venice; ***gnocchetti di farina di castagna al castelmagno*** (chestnut flour gnocchi with Castelmagno cheese) for Il Grill del Lovera dal 1939 in Cuneo; ***rinascimento italiano*** (Italian Renaissance) for Mater Terrae in Rome; ***filetto di spigola scottato su crema di cacio e pepe con verdure di stagione*** (scalded sea bass fillet on *cacio e pepe* cream with seasonal vegetables) from Michele Chinnappi in Formia (Latina); and ***culurgiones ogliastrini con demi-glace di vitello, Cannonau e tartufo*** (*culurgiones* dumplings from Ogliastra with veal demi-glace, Cannonau wine and truffle) for the Ristorantino Shardana in Paris. The Academy’s annual Dino Villani Prize rewards those “who distinguish themselves by supporting top-quality Italian food products”.

Attilio Borda Bossana





# Misleading food names

by **Morello Pecchioli**

*Honorary Academician for Verona*

*Birthed by cooks and pastry chefs from our own fair land, they display a false nationality.*

In Italy, sponge cake is called **Spanish bread**, but it's not Spanish. Trifle, known in Italy as **English soup**, also displays a false passport, not being a subject of King Charles.

Nor is Italy's **Russian salad** (Olivier salad) related to the potato, cabbage and meat soup called *shchi*, the sour, spicy *solyanka* soup, or *borscht*, a distinctively red beet broth which is more Ukrainian than Russian but became a flagship Soviet food under the USSR.

Spanish bread, English soup and Russian

salad were born here, Italian brothers and sisters, the progeny of cooks and pastry chefs from our *Bel Paese* ('fair land'). Whence their misleading monikers? After the brain drain, might salads, soups, biscuits and creams also escape? Keep calm: this was no escape or foreign food larceny. If we need a guilty party, it's none other than Italian cuisine which, over the centuries, mixed history and geography, churning out misnomers later sanctioned by the passage of time.





*The Genoese Giobatta  
invented 'Spanish' sponge  
to please royal Iberian guests*

Starting from sponge: its inventor was the Genoese **Giovanni Battista Cabona**, known as Giobatta, a cook and pastry chef in the service of **Domenico Pallavicini**, the Genoese Republic's ambassador at the court in Madrid in the mid-18<sup>th</sup>

century. For a royal banquet, Giobatta tweaked a recipe originally including ladies' fingers, replacing them with an egg and flour batter whose fluffy result he named 'Spanish bread' in the guests' honour. The cake, a triumph of creams, custards and other delights, entranced *el rey*, **Ferdinand VI of Spain**, and his court, which, with characteristic Iberian chivalry, credited the young Genoese pastry chef by christening his airy creation *génoise*: Genoese. Thus it has been

called ever since in Spain and also in France: *pâte génoise*.

**Hypotheses and legends abound regarding the origin of Italian trifle**, a creamy dessert made of custard and sponge cake soaked in Alcherme liqueur. Three regions claim its maternity: Emilia Romagna, Tuscany and the Marche. Some culinary scholars trace its origin to a 16<sup>th</sup>-century diplomat at the Este court, who, returning from England, reworked a boozy dessert he had encountered there. Others attribute its invention to the Tuscan maidservant of an English family living in the Florentine hills. Another school of thought asserts that it was a speciality of the Caffè Doney, a Florentine café popular in the 19<sup>th</sup> century with English expats who called the dessert *zuppa inglese*.

It was codified as 'English soup' in the late 19<sup>th</sup> century by the prophet of Italian cuisine, **Pellegrino Artusi**. Born in Romagna but resident in Florence, in his *La scienza in cucina e l'arte di mangiar bene* (*Science in the Kitchen and the Art of Eating Well*) he doesn't attribute it to any specific region. In its painstaking





recipe - number 675 in the book - Artusi mentions Tuscans, but only to berate them for making a "very loose cream" and serving it in coffee cups. "Prepared like this", he inveighs, "it is indeed more delicate, but unsuitable for moulding into a comely form". By this he means filling a mould with alternating layers of Alchermes-soaked ladies' fingers, custard, the same biscuits soaked in white *rosolio* liqueur, and more custard. Too sweet? "Correct with rum or cognac".

*There's a veritable salmagundi of hypotheses about the origin of 'Russian salad'*

There's a veritable salmagundi of hypotheses about the origin of 'Russian salad'. **But even the Russians acknowledge its Italian genesis.**

The late, lamented **Renzo Pellati**, a conscientious food historian and nutrition science expert, wrote in his *La storia di ciò che mangiamo* (*History of What We Eat*): "There's no 'Russian salad' in Russia; they call it 'Italian salad', and in German it's *italianischer salat*". Further, it's 'Italian salad' even in Denmark. Why 'Russian', then? Here the plot thickens and speculation abounds.

One hypothesis credits **Catherine de' Medici** with introducing it into France when she married its future king **Henry**

**II of Valois** in the 16<sup>th</sup> century. After spreading through France, the not-yet-Russian salad followed Napoleon's armies during their invasion of the tsar's lands, where it was popularised by one **Lucien Olivier**. Other scholars dispute this, believing that the salad reached Russia from Poland where it was introduced by its Milanese queen **Bona Sforza**, consort of **Sigismund I the Old**. A putative Piedmontese pedigree postulates that the usual court cook, this time in the service of the Savoy family, prepared the salad using favourite Russian vegetables (carrots, potatoes, beets) when the tsar arrived in Turin.

The sovereign, impressed, conveyed the recipe to his homeland; mayonnaise was added later, after the salad had gained a foothold. We can stop here, though there are other theories (one involving 'Russian-style' table service). Choose whichever takes your fancy. One thing is clear: 'Russian salad', as we know it, is Italian.

*Another deceitfully named food is parmigiana*

Another deceitfully named food is parmigiana. This mouth-watering dish of sliced fried aubergine baked with various cheeses - especially parmesan, but also pecorino, scamorza, caciocavallo - and

bathed in tomato sauce with garlic and basil **is not from Parma but from southern Italy. Sicily and Campania** both claim it. Who is right? To avoid making enemies, Italy's Ministry of Agriculture, Food and Forestry Policy has entered this preparation of aubergine, a vegetable introduced by Arabs to southern Italy in the early Middle Ages, **into both regions' PAT (Traditional Agrifood Products) registries** and that of **Calabria**, to avoid cheesing it off too. There's even a **parmigiana in Puglia**: the *parmigiana de Santu Ronzu*, named after St Orontius of Lecce.

Why is this dish called 'parmigiana' rather than 'siciliana', 'campana' et al? Perhaps because it co-stars the Vittorio Gassman of cheeses, Parmigiano Reggiano? Maybe, but **in Sicily** people point out that their *parmigiana di melanzane* was made with Sicilian *pecorino* before the more recent arrival of that Emilian cheese. **Neapolitans** make their case by citing two cooks living between the 18<sup>th</sup> and 19<sup>th</sup> centuries, **Vincenzo Corrado** and **Ippolito Cavalcanti**, whose respective treatises on Neapolitan cuisine contain recipes prescribing generous layers of *parmigiano* cheese between strata of what Corrado called *zucche lunghe* ('long pumpkins') and Cavalcanti called *melanzane* (aubergines).

One angle, however, cannot be overlooked: it points the way to Emilia, and indeed Parma. The Treccani Italian dictionary intones: "In gastronomic parlance, a dish prepared in the manner of the *parmigiani* [inhabitants of Parma], consisting of sliced, floured vegetables, sometimes covered in egg and fried, then layered with tomato sauce, abundant *parmigiano* cheese and sometimes mozzarella, and subsequently baked: this is the parmigiana of aubergines, courgettes, cardoons..."

Who's right: Parma, Sicily or Campania? Discussing this over a dish of the delicious, calorie-packed flavour bomb that is parmigiana, we will agree with our Ministry of Agricultural Policy: in its red, white and green splendour, let parmigiana unite us.

**Morello Pecchioli**



# Ultrasounds in the kitchen

by **Roberto Zottar**

*Honorary Delegate for Gorizia*

*The treatment affects food consistency, increasing taste perception by at least 30%.*

**U**ltrasound has now even joined the technologies adopted by eminent chefs. **This is not yet another new cooking technique**, because ultrasounds, despite releasing enormous energy, raise temperatures only slightly within liquids, affecting just the **rheological properties of food**. Laboratory experiments and blind taste tests with expert taster panels indicate that **ultrasound-treated foods are more 'palatable'**, because the treatment affects texture, facilitating taste perception by at least 30%.

*Foods to be treated are vacuum-packed and immersed in a water bath*

In cuisine, ultrasound is deployed by vacuum-packing food and immersing it in water. In physical terms, **high-frequency waves traverse water very swiftly** (>1450 m/s), rapidly reaching food surfaces which they alternately compress and decompress. When the microbubbles created in the compression phase reach their minimum possible radius, they implode, liberating enormous energy when the liquid and the food surface collide. This rapid implosion is known as 'ultrasonic cavitation'. This chain reaction unleashes **considerable energy, producing a 'cellular massage' effect on foods**, facilitating the **release of their juices and flavours**. Ultrasound machines transform electricity into waves and thence mechanical vibrations to **optimise food texture and flavour perceptibility** while respecting food structure.

## WHAT ARE ULTRASOUNDS?

*In the collective imagination, the term 'ultrasounds' evokes the high-frequency acoustic waves – above 20 kHz – emitted by cetaceans, bats and a few other animals for communication and navigation. This sophisticated interaction and survival strategy has long fascinated illustrious luminaries who, having studied ultrasound propagation in detail, then evaluated the scope for industrial ultrasound use. From the 1960s, ultrasound technology*



*was gradually introduced into electronics and the pharmaceutical field, and even into dentistry and medicine, facilitating diagnosis and some trauma treatments. In the mechanical industry, ultrasound has proven itself indispensable for certain cleaning, washing and soldering processes. This technology has also been used in sonar and geographical positioning systems.*

## *How ultrasounds affect meat*

**The novelty nowadays is ultrasound's ability to tenderise meat.** In nature, proteins and carbohydrates take the form of macromolecules with different levels of organisation. Proteins, for example, have four levels, which determine their tenacity and water retention. When subjected to energy, such as heat, proteins are denatured, meaning that under



certain conditions and temperatures which vary according to type of meat, **proteins unravel, release their water content and become more digestible.** After being cooked by traditional methods, meat is left to rest, allowing denatured proteins to rearrange themselves and retain as much water as possible. This is a major determinant in palatability, because succulence is crucial. **Ultrasounds are used for tenderising meat because they interact with proteins,** unravelling them in direct proportion to time and intensity of irradiation. The added value of this method lies in the fact that **it produces far softer, more succulent foods which then cook much faster** than untreated foods. Research indicates that ultrasound treatment **reduces necessary meat 'ageing' times by approximately 80%** for a wide variety of cuts and animal species. The return is even higher with tougher cuts, including those rich in collagen, such as brisket, neck and oxtail, whose tenderness and flavour will improve dramatically. For this purpose, the **European Union** has financed the development of the **UltraTender project: a 'non-invasive high-power ultrasound (HPU) processing method for meat', to increase meat quality** by modifying tissue structure with ultrasound. HPU could reduce meat

processing costs up to 60%, thereby increasing the profit margin on fresh meat by as much as €4.50 per kilo of product. **This would allow steak tartare to be made from tough, sinewy meats** traditionally only employed in stews or otherwise extensively cooked. Ultrasounds can also be used for pre-treating **game**, which can then likewise be transformed into steak tartare.

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*An ideal technique  
for raw foodies too*

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Ultrasound treatment is **also perfect for raw foodies**, as it uses **temperatures not exceeding 17-18 degrees Celsius**, allowing, for example, the creation of **raw giardiniera sauce, maintaining vegetables' properties unaltered.** There's more: **essential oils** are 'captured' more easily through osmosis; thus, aromatic wood can be immersed into water to 'extract' its fragrances and oils for use in various preparations. Ultrasound baths have likewise facilitated the transfer of aromas into oil, alcohol, water or mixed liquids. It's now possible to buy an **ultrasound apparatus called a 'sonicator'**, very similar to a drill, which aids the preparation of soups, bisques, creams and sauces even immediately before serving.

**The device 'fragments' ingredients into tiny pieces** which then release flavour more easily. During the treated food's brief sojourn in the mouth, **subtle taste nuances** will be far more intense and persistent, and thus more easily perceptible, than they normally would. Sonicators can also simply cream fruits and vegetables more finely than ordinary mixers, breaking up any remaining chunks left by less precise tools. **Domestically, small, affordable ultrasound baths** originally intended for cleaning jewellery can be used by 'cooking tech enthusiasts' to **create amazing homemade limoncello or infusing oils** with rosemary, sage, spicy pepper or lemon. Technological developments in ultrasonic baths have also facilitated the creation of devices, based on experimentation by prize-winning chefs, which **combine ultrasounds with low-temperature cooking.** On the one hand, low temperature, **meaning 0-95°C**, allows homogeneous cooking without altering nutritional properties; on the other, high-frequency sound waves penetrate far into organic tissue, producing a surprisingly intense micro-massage. The results are decidedly superior to those of traditional cooking: fish and molluscs emerge cooked to perfection from their brief dip in the ultrasound bath.

**Roberto Zottar**