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New 100 pieces of info to use in tea stories

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www.facebook.com/teatipsbrief/
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Tea micro-trends

Tea Bags for Cats and Dogs

http://www.foodandwine.com/news/high-tea-evolved-around-the-world

Under the link (https://www.teapetsalon.com/) you can find a small online store offering herbal tea bags (with no tea in them in the strict sense of this word) for cats (with valerian root, of course) and dogs. And there's even a video on the site, where a dog drinks this tea, though not for very long. This month, Hotel deLuxe (it's in Portland, USA) has announced their new tea service for pets, and while you're having Afternoon tea, your pet can enjoy a caffeine-free tisane from the mentioned TeaPet store.

Fresh Frozen Millennia Tea

http://worldteanews.com/news/retailing-flash-frozen-fresh-tea

The Canadian Millennia Tea project is looking for tea plantations all over the world, located near facilities for rapid cleaning and flash-freezing of freshly picked tea leaves. And when they finds such plantations, fresh tea leaves are collected, cleansed and frozen. Then they sell freshly frozen tea at $45 per 100 grams (compared to the English prices for fresh tea leaves — next to nothing).

Freshly frozen tea can be brewed in the traditional way — with boiling water. You can also blend them with water (and consume not just an infusion but tea leaves as a whole), make ice tea and a lot of other wonderful drinks. And food, by the way, also — fresh tea leaves are good fried in tempura.

The main consumer disadvantage of freshly frozen tea is its storage after purchase — as soon as you buy such tea you need to go home right away and put it into a freezer6 refreezing won't do it good. But this drawback is completely outweighed by the advantages. Firstly, it's fun. Secondly, they say, it is quite decent in taste. Thirdly, freshly frozen tea can be used to make your own traditional tea at home, and freezing can replace twisting in tea leaves. And, finally, fourthly, this tea can be considered the most healthy and natural.

The Millennia Tea web-site is not working yet, but they have a Facebook page (https://www.facebook.com/MillenniaTEA/) and YouTube channel: https://www.youtube.com/channel/UCoOs03wbU4Fbiiv8B1r39Fg.

Shrubs and Leaves of The True English Tea

https://tregothnan.co.uk/product-category/teas/fresh-tea/

We've been following the Tregothnan Tea Estate project, which works in English Cornwall, from the beginning of its tea history (the estate itself, as you probably know, has a long pre-tea history). The start of the project was promising, but very quickly it turned out that "real English tea" is more of a marketing concept, rather than a real product. Of course, tea in Tregothnan was grown and produced, but in its pure form it was a completely non-market product — it was scarce, it was expensive and, we

dare to assume, not very interesting. Blends of local English tea with Assam were not interesting for us, and Tregothnan estate as a tourist product — not particularly convenient. So, for a while, we stopped following the project.

But over this time, without changing the principle approach (real English tea as a marketing locomotive), the project accumulated a lot of entertaining services. Tea there, as before, is grown, produced and blended — but now colleagues from Tregothnan deliver it to number 10 Downing Street and some retailers, for whom, of course, it's cool to include tea from an English plantation in their assortments. In addition, Tregothnan sells tea seedlings as touching souvenirs with a rich spiritual and ecological meaning.

But the most luxurious of the new Tregothnan's services seems to be the delivery of freshly picked tea leaves in an amount sufficient to make tea for two, at home. Well, that is, two and a half grams of freshly picked tea leaves will be transported to your home with all possible speed. And then you can do with them whatever you want — prepare tea or fry them tempura-style.

Ninety-two and a half pounds for two and a half grams. It could be more expensive.

Tea in Light Bulbs

http://www.eatwithhop.com/2016/08/where-to-buy-drinks-in-light-bulb.html

Bottles in the form of a light bulb with a lid stylized as a bulb base fitted in well at tea bars selling drinks of different bizarre kinds. Under the link you can find a review of various "lamp-bottle" establishments in California, prepared by colleagues from Eat with Hop. Approximately half of them use light bulb bottles to serve all kinds of tricky tea-based drinks. Taking into account some variety of lamp bottles themselves, bright visual appearance of the drinks and the possibility to put a straw in the light bulb bottle, it turns out spectacular at any rate. And sometimes, perhaps, it is delicious.

Study of tea

Epigallocatechin Gallate Will Help Bakers Get Rid of Acrylamide

http://www.sciencedirect.com/science/article/pii/S0308814617315054

Curious researchers from China, New Zealand and Singapore added epigallocatechin gallate to dough, baked bread from this dough and studied the outcome. It turned out that with the addition of epigallocatechin gallate, bread turns out to be 6% less damp, not as pimply, lighter, more yellow, with decreased granule size and porosity, and the crust was less red than usual. But most importantly, the bread contained 37% less acrylamide, which is known to be fire dangerous, explosive, and affects the nervous system, liver, kidneys and irritates the mucosa. Liver, kidneys and mucosa … — there's a certain rhythm in the words.

Dark Teas and Palmitic Acid

http://www.sciencedirect.com/science/article/pii/S0963996916304525

Chinese scientists have studied dark teas (44 samples: Pu-erh, Fuzhuan and Liubao tea) to build their phytochemical profiles and evaluate antioxidant properties. It turned out that flavonoids are most abundant in Pu-erh, and least abundant in Fuzhuan tea, tea polyphenols levels are approximately the same in the dark teas, and the main aromatic component of all dark teas is palmitic, or hexadecanoic, acid. The antioxidant properties of the teas under study varied within a fairly wide range and (what a surprise) correlated with the content of epigallocatechin gallate in the samples.

A Ton of Tea and 15 kg of TNT

https://www.ncbi.nlm.nih.gov/pubmed/28965294

Iranian scientists, following their Sri Lankan colleagues, have studied the complex burden that the environment receives in the production of black, green and oolong tea in the Iranian province of Guilan. Among other entertaining data, researchers have determined the amount of energy needed to produce a ton of a particular tea. The production of a ton of green tea requires 58182 megajoules, a ton of oolong tea — 60947 megajoules, a ton of black tea — 66301 megajoules. This information is very important, since on its basis it is possible to compare the production of tea with other simple and understandable processes. For example, the production of one ton of tea requires the amount of energy that can be released during the explosion of 15 kilograms of TNT.

Signal Metabolites α-Farnesene and β-Ocimene

http://www.sciencedirect.com/science/article/pii/S0168945217303904

Chinese scientists have studied the system of self-defense of tea trees, which “turns on” when these plants are damaged by herbivores. This self-defense system consists of two main components. The first component is a set of volatile substances, which the tea tree produces in order to scare off pests and/or to attract natural enemies of these pests. The second component is a set of volatile substances, which the tea tree produces in order to inform neighboring plants about the danger. So. In

the experiments, in which tea plants were subjected to mechanical damaged combined with jasmonic acid, and volatile metabolites of these plants were fixed by different spectrometers-chromatographs, the scientists determined the composition of the acting and signaling set of metabolites. The composition of the first set of volatiles can be found under the link (methyl gallate is the simplest name there); and among the signal metabolites, under the influence of which adjacent plants start producing metabolites of the active set, the scientists recognized α-farnesene and β-ocimene, also known as 3,7,11-trimethyl-1,3,6,10-dodecatetraene and 3,7-dimethyl-1,3,6-octatriene.

A Drop of Tea, Microfluidic Paper and a Smartphone

http://www.sciencedirect.com/science/article/pii/B978012813235700012X

As early as 2012, a Nepalese scientist described a method for quantitative determination of total amino acids in tea using paper microfluidics with ninhydrin reaction and a smartphone with an installed application capable of processing the visual results of this very reaction. Ninhydrin reacts to amino acids bright and blue-violet, which means that the Nepalese idea is not only efficient, but also visually-effective. You drip a drop of tea on a sheet of microfluidic paper, and then watch whether it turns blue or not. If it turns blue, it means that there are amino acids in tea and you need to photograph the result of the test, so that the smartphone could estimate the approximate amount of these amino acids.

Apparently, this technique has not received wide practical application, but, undoubtedly, is of laboratory microfluidical interest.

Variable Magnetic Field — Plus 10 Points to Caffeine

http://www.mdpi.com/1420-3049/22/10/1656/pdf

Polish scientists have studied the effect of the magnetic field on the extraction of minerals and caffeine when infusing several samples of black and green tea, and concluded that variable magnetic field has a significant effect on this extraction. Aluminum, potassium, calcium, magnesium, phosphorus, sulfur, copper and zinc are extracted under the action of variable magnetic field in markedly larger quantities, and 5-20% more caffeine is extracted with the application of variable magnetic field comparable with the conventional water-based extraction technique.

Caffeine and Ash. And an Impeccable Sense of Style

https://www.ncbi.nlm.nih.gov/pubmed/28895389

Specialists from Rzeszów University of Technology bought 18 Chinese teas in an online store and studied them for every chemical. Green teas were found to have the most valuable composition of minerals, i.e. the highest contents of zinc, magnesium, manganese, potassium, calcium and aluminum. There were also the highest contents of protein in green teas. Black teas had the highest contents of total ash and caffeine, while white teas were characterized by high content of volatile substances, the highest content of water and the lowest content of total ash.

Caffeine and ash — a great name for a small atmospheric cafe, which would demonstrate short versions of the movie by Jim Jarmusch. Sum and substance of it. Polish scientists know their stuff.

Black Tea vs. Lithium Disilicate Ceramics
https://www.ncbi.nlm.nih.gov/pubmed/28923549

Greek scientists have studied the aesthetic stability of lithium disilicate ceramics against black tea, red wine and coffee. Lithium disilicate is actively used in dental prosthetics and, naturally, the ability to preserve color under the influence of everyday drinks is its critically important property. Researchers simulated a three-year cycle of natural contact of lithium silicate ceramics in different variations (with a protective glazing, without it, etc.) with drinks by immersing the samples for 54 hours in the staining solutions. The scientists found out that almost all groups of lithium disilicate samples demonstrated color changes below the clinically perceptible level. The only exception was the combination of black tea and lithium disilicate ceramics without glazing. Which changed the color more than progressive dentists can afford.

Identification of Epigallocatechin-3-O-methyl-gallate in a Korean Tea Cultivar
http://www.sciencedirect.com/science/article/pii/S2352340917303840

Epigallocatechin-3-O-methyl-gallate (or methylated catechin) is not as widely known as other catechins — components of tea. And this is not due to the fact that its name is more complicated. It is just less common — unlike other catechins, the methylated catechin is found only in the leaves of tea trees of certain varieties. At the same time, it seems that methylated catechin has a more pronounced antioxidant effect than 'conventional' catechins. And, in addition, it has an anti-allergic effect — that's why advanced allergic people in Japan and beyond appreciate green teas made from Benifuuki cultivar, which contains the methylated catechin.

Another cultivar, which contains epigallocatechin-3-O-methyl-gallate, is Korean Jangwon No.3. This variety fell into hands of Korean researchers who compared it to three other cultivars: wild Korean tea, and Jangwon No.1 (this is an EGCG-rich cultivar) and Jangwon No.2 (a cultivar with a particularly intense taste).

From the table in the article under the link, it can be seen that fresh leaves of Jangwon No.3 not only contain methylated catechin in sufficient quantities (which was not found in Jangwon No.1 and No.2 and which is present in very small quantity in wild Korean tea). The amount of other catechins found in Jangwon No.3 is 20-30% higher than in the other cultivars, and the amount of caffeine 30-40% higher. At the same time, Jangwon No.3 is poorer (by 20-40%) in amino acids, including theanine and GABA.

So, it seems, that if you mix the leaves of Jangwon No.1 (which has the most amino acids) with leaves of Jangwon No.3 (having a lot of catechins, methylated catechin and caffeine), make green tea out of them and brew this mix strong, then youth, beauty, health, wealth and vigor will become inevitable.

A New Way to Extract Aromatic Substances from Tea

http://www.sciencedirect.com/science/article/pii/S002196731731230X

American specialists applied a novel sample preparation technique for the analysis of green tea aroma/flavor compounds and identified 301 constituents — it is 56 components more than was detected previously. The new sample preparation method is called Ice concentration linked with extractive stirrer (ICECLES) — and, as far as we understand, it is a combination of freeze concentration and stir bar sorptive extraction (previously used for analysis of green tea aroma/flavor compounds) methods. After preparing samples of green tea with such an advanced method, gas chromatography-mass spectrometry was used, which found in the green tea such wonderful things as furfural (aroma of fresh rye bread or almonds), maltol (fruit flavors), eugenol (clove flavor), 2-methylpyrazine (pyridine flavor), phenethyl alcohol (rose flavor) and α-terpineol (lilac flavor).

Pyridine, by the way, is a basic heterocyclic organic compound with one nitrogen atom and an unpleasant odor.

Tea As a Good Source of Manganese

https://link.springer.com/article/10.1007%2Fs12011-017-1140-x

Polish scientists purchased several samples of tea (different types and from different regions) and tea-like drinks in the neighborhood stores and studied them for copper, cadmium, zinc and manganese. It turned out that, with respect to the ratio of manganese / cadmium, black tea is about twice as high as green tea and other teas, which is exclusively due to the lower content of cadmium in black tea. By the ratio of zinc / copper, black tea is inferior to other teas, while by the copper / cadmium ratio — superior. Comparing the obtained data by the content of the mentioned metals with their recommended daily intake, the scientists also concluded that tea can be considered as a serious source of manganese only, the other metals are better to look for in other products.

Unnatural Methods of Catechins Extraction

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4444893/

In 2014, Indian specialists collected data on various unnatural ways of preparing tea and evaluated them from the point of view of the extraction of various useful components from the tea. It turned out that ultrasonic treatment of tea during its infusion in warm water (not in boiling hot water) increases the extraction of tea catechins. Microwave assisted extraction of catechins was also high, however, this was compensated by the risk of their degradation due to high temperatures. In addition, brewing in the microwave was also good at extracting polysaccharides, biopolyester and Cutin, if that's all you need. Low-temperature infusion of tea under high pressure allows you to extract all that can be extracted very quickly from tea and is also effective in terms of extracting catechins. Supercritical fluid extraction (SFE) is best suited for extracting caffeine and chlorophyll. Finally, subcritical water extraction (SWE) was also good for extracting polyphenols and caffeine from tea.

In short, any unusual way of making tea extracts catechins better than traditional brewing.

Traces of Chinese Soils in Chinese Tea

https://www.deepdyve.com/lp/elsevier/relationship-between-multi-element-composition-in-tea-leaves-and-in-ZaCQlhNN7x

Chinese experts have established that the content of chemical elements in tea leaves correlates with the content of these same elements in soil samples on which tea trees were grown. To do this, they studied samples of soil and fresh tea leaves from three tea regions of China for the content of twenty chemical elements in them. They found that the content of magnesium, sodium, calcium, nickel, rubidium, strontium and lead are good for correlating tea leaves with their native soil. The experts believe that the markers discovered by them can be used for geographical identification of tea.

Orthodox Black Tea Is The Most Sustainable

http://www.sciencedirect.com/science/article/pii/S2352550917300246

Sri Lankan experts have studied the social, economic and environmental impact of tea at various stages of its interaction with people and environment. And they found that at the cultivation and processing stage, low grown orthodox tea is the most efficient in terms of labour use, energy use and carbon emissions. And at the stage of brewing, the most energy-consuming is tea in bags. Carbon dioxide emissions are the highest in the production of tea packaging — with tea bags in the “leaders” again. And the most costly in terms of the use of labor is the tea cultivation stage.

This is always the case — the most profitable part of the industry has the highest pressure on the environment.

The Taste and Aroma of The Dianhong Were Sliced and Diced

http://www.sciencedirect.com/science/article/pii/S0963996917303344

Chinese experts studied 16 samples of Dianhong black tea, made from four different tea tree cultivars (Yunkang No. 10, Xueya 100, Changyebaihao and Shishengmiao) and found out the following. The total amount of volatile compounds in 16 tea samples was 73. Of these, 55 are present in teas made from Yunkang No. 10, 53 — in teas from Xueya 100, 49 — in teas from Changyebaihao and 51 — in teas from Shishengmiao. The scientists also managed to identify 11 flavor attributes of Dianhong, namely floral, fruity, grass/green, woody, sweet, roasty, caramel, mellow and thick, bitter, astringent, and sweet aftertaste. And, of course, it turned out that Dianhui teas made from different cultivars differ from each other in taste and aroma.

New Tea Endophyte

https://link.springer.com/article/10.1007%2Fs00203-017-1391-0

Endophytes are microorganisms that live right in the tissues of living plants without harm to the latter. On the contrary, such cohabitation is often beneficial to the plant. Now then. Chinese scientists have discovered a new type of endophyte bacteria of the genus *Olivibacter* in the roots of tea trees in Puer district. And they proposed to call them *Olivibacter flavus*.

Unfortunately we have no information about the nature of the cohabitation of the tea tree and the new bacteria and whether this bacteria is specific for Puer or is a common tea endophyte.

Fungal Communities in Post-Fermented Teas

It seems that all scientific might of China is focused on tea now. Here are two studies of microorganism communities "working" in post-fermented teas.

In the early stage of the production of fu zhuan tea, the genus *Aspergillus*, *Cyberlindnera* and *Candida* predominate in its fungal community, but in the last stage of production, only *Aspergillus* fungi predominate: https://www.nature.com/articles/s41598-017-07098-8.

Fungi of the genus *Aspergillus*, as it turned out, dominate in the fungal communities that living in lubao tea. Only that there they share the dominance with the genus *Eurotium*: http://www.sciencedirect.com/science/article/pii/S096399691730279X.

Aspergillus species, naturally, are not purely tea mushrooms. There are many different kinds of them, and you can often come across them in everyday life. So if, all of a sudden, you find mold in your flowerpot, say hello to the relatives of the Chinese tea fungi.

Alkenes, Alkanes and Other Compounds in Dark Teas

http://www.sciencedirect.com/science/article/pii/S1021949817300340

Chinese scientists have compared the composition of aromatic volatiles forming the flavors of Chinese post-fermented teas — pu-erh, liubao, Ya'an Tibetan tea, jingweifu, fu zhuan and quingzhuan. And the aromas of teas were compared not only among themselves, but also with the aroma of green tea, which was used as a control one. In total, 98 compounds were isolated in the aroma of the studied teas — including 20 aldehydes, eight arenes, six acids, 17 alcohols, 13 ketones, nine esters, nine methoxyphenolics, three alkenes, seven alkanes and six other components, the names of which, apparently, are even more scary to pronounce.

In the course of the study, it was found that the "aromatic map" of pu-erh was dominated by methoxyphenols; Ya'an Tibetan tea — by aldehydes and ketones; liubao — by alcohols and, in particular, cedrol; jingweifu — by ketones and esters. In Hunnan fu zhuan tea there was a lot of aldehyde (E, E) -2,4-heptadienal, as well as geranylacetone, hexahydrofarnesylacetone and damascenone. Well, and in Hubei tea, qingzhuan, there was a lot of hexadecanoic acid and nonanoic acid.

The study also demonstrated that, by the content of aromatic compounds, the post-fermented teas are very different from the green ones and, in addition, they can be divided into two groups; pu-erh with lubao being in one group, and all the rest — in the other. The scientists explain the obvious difference between dark and green teas by the change in aromatic substances in the process of post-fermentation involving microorganisms. And the difference of various dark teas from each other is due to fact that their post-fermentation occurs with the participation of different bacterial and fungal communities.

Green Tea Diet Makes Rainbow Trout Leaner

http://en.ustc.findplus.cn/?h=articles&db=a9h&an=123151778

Chinese experts fed rainbow trout (*Oncorhynchus mykiss*) diets supplemented with green tea in order to determine how such a diet would affect the growth performance of fish, and its fat content, including visceral fat. For 60 days, three groups of trout were given green tea in different concentrations, and the fourth group (the control one) didn't receive any tea. Two months later, it turned out that the fish consuming green tea had reduced fat content. Which, on the one hand, was good, because, for example, visceral fat makes it difficult to process fish. But on the other hand, the "tea" fish had lower weight gain, although the food intake for some of them was even higher compared with the control diet.

Possible Carbonated Future of Tea

https://www.nature.com/articles/s41598-017-08465-1

Chinese experts have conducted an experiment, the purpose of which was to test how tea reacts to a high concentration of carbon dioxide in the air. For this purpose, tea trees for 24 days were exposed to elevated carbon dioxide concentrations (more than twice as much as there's normally in the atmosphere). It turned out that elevated CO2 increased the concentrations of soluble sugar, starch and total carbon, but decreased the total nitrogen concentration. Besides, CO2 enrichment led to the increase of tea polyphenol, free amino acid and theanine concentrations and decrease in the caffeine concentration.

So with the increase of carbon dioxide concentration in the air, tea will become healthier but less invigorating.

All Power Is in Ethylamine

http://pubs.acs.org/doi/full/10.1021/acs.jafc.7b02437

Chinese scientists were puzzled by the question of why *Camellia sinensis* accumulates L-theanine, and other plants, including other types of camellias — don't. It turned out that L-glutamic acid, one of the precursors of L-theanine, is present in most other plants they studied (*Camellia nitidissima*, *Camellia japonica*, *Zea mays* (corn), *Solanum lycopersicum* (tomato), and *Arabidopsis thaliana*), while ethylamine, another precursor of L-theanine, specifically accumulates in *Camellia* species, especially *Camellia sinensis*. In addition, almost all the plants studied contain the enzyme/gene catalyzing the conversion of ethylamine and l-glutamic acid to l-theanine. Moreover, when ethylamine was added to the studied plants, they began to produce L-theanine. Thus, scientists have established that the ability of *Camellia sinensis* to accumulate L-theanine is due to the availability of ethylamine in this plant.

Chlorogenic Acids in Different Plants

http://www.sciencedirect.com/science/article/pii/S0963996917302697

Brazilian scientists have studied 100 plants used for the preparation of beverages for the content of chlorogenic acids in them (these are products of esterification of caffeic acid and quinic acid). Chlorogenic acids are rather strong antioxidants, they can reduce the risk of cardiovascular diseases, demonstrate antiviral and antibacterial activity and are generally good. So, the highest concentrations of the chlorogenic acids were found in yerba mate, white tea, winter's bark, green tea , elderflower and some other completely mysterious plants.

It is a bit strange not to find coffee among the leaders in the content of chlorogenic acids.

Oolongs With and Without Stem

https://www.ncbi.nlm.nih.gov/pubmed/28764024

Chinese experts have compared the aroma of oolongs made from leaf with stem and oolongs made from leaf only. They came to the conclusion that stems, contrary to popular belief, do not significantly improve the aroma of tea, neither of dry tea leaves nor of infusion. But at the same time, the researchers found that volatile monoterpenes and theanine were accumulated more abundantly in stem than in leaf, while jasmine lactone, indole, and trans-nerolidol were lower in stalk than in leaf.

Swelling and Infusion of Tea in Tea Bags

https://www.ncbi.nlm.nih.gov/pubmed/28740305

Indian specialists have studied swelling and infusion kinetics of tea granules in tea bags, with regards to the shape of tea bags and the way they are infused. It turned out that tea is infused more intensively, if tea leaves are smaller, water is hot, and the tea bag is repeatedly dipped into water during infusion. Smaller tea leaves swell better. If there is more tea in the bag, then all substances are extracted from it worse. In a two-chamber tea bag, tea swells and is brewed most intensively. In addition, the degree of swelling of tea leaves and the intensity of infusion depend on the shape of tea bags and the speed of their immersion in water. But in any case, bagged tea swells less and is infused less intensively than loose leaf tea. At the same time, the Weibull distribution model was found to be in good agreement with the swelling data.

Tea and health

Epigallocatechin-3-gallate Protects Lungs of Smoker Rats

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5592236/

Scientists from Hong Kong took two groups of male rats and made one of them breath sham air, and the other — air with cigarette smoke. Both groups of rats received by oral gavage a solution containing epigallocatechin-3-gallate. Well, then, of course, the rats were studied in every possible way. It turned out that epigallocatechin-3-gallate reduces the airway inflammation and prevents the formation of collagen fibers in the lungs in the “smokers” rats.

Epigallocatechinallate Protects Rats from Arsenic Poisoning

https://www.ncbi.nlm.nih.gov/pubmed/29040955

Indian scientists have studied the protective role of epigallocatechin-3-gallate on arsenic induced testicular toxicity in rats. In this regard, four groups of rats were put on different diets. One group was given their usual food. The second was fed with arsenic. The third — with epigallocatechin gallate. And the fourth — with arsenic and epigallocatechin gallate. They received all this together with their ordinary food, of course. For forty days. Forty days later, it turned out that in rats fed with arsenic together with epigallocatechin gallate, the deleterious effect of arsenic on testicles was less than in rats of pure arsenic group. In particular, the use of epigallocatechin gallate has reduced the level of malondialdehyde, which, as is known, can strongly affect reproductive function and cause mutations.

Green Tea Against Maternal Deprivation

https://www.ncbi.nlm.nih.gov/pubmed/29031548

Brazilian scientists have studied the possibility of using green tea to correct memory problems caused by maternal deprivation. Specialists suggested that memory deficits induced by maternal deprivation are caused by oxidative stress. Well, and here comes green tea with its antioxidant properties. In brief, they wanted to check whether it worked.

Newborn rats were separated from mothers and given green tea instead. Then scientists evaluated their memory and hippocampal oxidative status. Usually, the increased level of hippocampal reactive oxygen observed in baby-rats reduced after taking green tea. A lowered level of glutathione, also characteristic of weaned rat pups, could not be corrected with green tea, but, in general, the situation with the hippocampal oxidative status and with the memory of the experimental subjects became better after tea.

Do Not Smoke, Do Not Snore, But Drink Tea Instead

https://www.ncbi.nlm.nih.gov/pubmed/29031748

For more than five years, Chinese scientists have observed the health and lifestyle of 34,825 Shanghai men, trying to find the correlation between the risk of diabetes and the duration of sleep with all the

attendant factors. Having diagnosed diabetes in 1521 people in the course of the observation, experts found that a longer sleep duration is associated with a higher risk of developing diabetes, especially for current smokers, regular alcohol drinkers, men with a high body mass index, hypertension or comorbidity, and men who did not work nightshift or who snored. The association between sleep duration and diabetes may be modified by tea drinking. So, it seems that lean people who do not smoke, do not drink, do not snore, but drink tea, can sleep long with a peaceful mind, this will not increase the risk of developing diabetes for them.

The Most Secret Polyphenol Knowledge

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5601283/

One English professor wrote a remarkable article in which he described the specificity of polyphenols as components of a diet. Among other interesting topics, the author of the article explains the fundamental difference between polyphenols and other good things such as vitamins or minerals. The difference is that polyphenols do not accumulate in the human body and begin to exert their beneficial polyphenolic effect only at a certain dosage. Well, that is, roughly speaking, if the recommended dose of any polyphenol for correction of any health problem is 10 milligrams and you need to receive it with a certain periodicity, for example, daily, it does not mean that you can have 5 mg of this polyphenol three days in a row, and then take the knockout dose of 15 mg. Everything that does not reach the reference dose, simply does not count.

And from this it follows that, unlike vitamins, “recommended daily doses” do not make sense for polyphenols. Polyphenols can be recommended for specific cases — and such recommendations, as you understand, are very individual.

Part of this tricky property of polyphenols is connected with the problem of transferring their effectiveness from laboratories to real life. In tube tests, they show themselves perfectly, because they work in pure form, in well controlled dosages and immediately. And to receive the same dosages, for example, through tea drinking is a more complex task.

The Pharmacokinetic Interaction of Green Tea and P-glycoprotein

https://www.ncbi.nlm.nih.gov/pubmed/28980319

Japanese scientists have studied the pharmacokinetic interaction of green tea and P-glycoprotein. P-glycoprotein is known to transport many substances (lipids, steroids, peptides and others) through the cell membrane - and is widely used in pharmaceutics. The interaction of P-glycoprotein and green tea has been studied both in vitro and in mice — and, here we omit all important but intermediate findings, scientists have found that green tea impairs the absorption of drugs containing P-glycoprotein. In short, the consumption of such medicines is best to be separated in time with the consumption of green tea. And be sure not to drink them with green tea.

Curcumin, Resveratrol and Epicatechin Gallate Work Best Together

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5617393/

American scientists have created a drug that is a combination of curcumin, epicatechin gallate and resveratrol (at the ratio 4:1:12.5, it took quite a long time to find the right ratio) and tested it in mouse models of uterine cancer caused by the papillomavirus. The use of the drug (named TriCurin) resulted in a 80-90% tumor reduction and proved to be safe for mice. All components of the drug can be found in conventional products — curcumin in turmeric, epicatechin gallate in tea, and resveratrol in grapes and red wine — but with the natural consumption of these products the effect is not achievable. The unique synergetic formulation in the right ratio is hard to capture.

Theaflavins Against Three Trichomonads

https://www.ncbi.nlm.nih.gov/pubmed/28903731

American scientists have studied the ability of a number of phytochemical-rich food-derived preparations to suppress the development of trichomonads. Extracts of black and green tea, grapes, pomegranate, marijuana and jojoba were tested against three types of trichomonads. It turned out that black tea extract suppresses their development most effectively — primarily due to a high content of theaflavin. As it turned out, the extract of black tea can effectively affect even those trichomonads that are resistant to metronidazole. And, most importantly, black tea extract is safe for normal microflora in places where trichomonads are common.

Antibacterial and Laxative Activities of Strictinin Isolated From Pu-erh

https://www.ncbi.nlm.nih.gov/pubmed/28911609

Stictinin is a polyphenol compound, which, according to the authors of the study, is contained in pu-erh made from buds and young leaves of wild tea trees. In fact, of course, strictinin is found not only in pu-erh, but also in other teas. Moreover, it is contained in cloves, guavas and some other plants. Stictinin possesses antiallergic and anti-influenza action, although for the latter action, concentrations of the substance needed are unattainable via normal tea consumption. So. Chinese experts have studied the effect of pu-erh strictinin on bacteria and determined that its minimum inhibitory concentrations for the bacteria *Propionibacterium acnes* and *Staphylococcus epidermidis* (these bacteria, under certain conditions, can cause skin diseases) are 250 μM and 2000 μM, respectively, and these concentrations are higher than in the antibiotics traditionally used against these bacteria. Also, experiments have shown that with simultaneous use of antibiotics and strictinin, a synergistic antibacterial effect is observed.

In addition, experiments on rats have revealed the laxative effect of strictinin, associated with its ability to stimulate intestinal transit. The researchers believe that strictinin is one of the active components that provide the antibacterial and laxative effect of pu-erh and suggest using this tea as a mild alternative to antibiotics and various delicate medicines.

It's All Unclear with Tea, Wine, Cocoa and Diabetes

http://www.sciencedirect.com/science/article/pii/S0278691517305252

Spanish specialists have summarized data on the effects of tea, red wine and cocoa components on people with diabetes.The experts came to the conclusion that there is a lot of data on the antidiabetic

utility of these drinks, in some cases plausible mechanisms of the influence of these drinks are described, including the ones in human studies. But, since many factors (diet, lifestyle, etc.) affect the development of diabetes, it is too early to speak about a clear and predictable antidiabetic effect of tea, cocoa or red wine.

Epigallocatechin-3-gallate: All at Once

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5572593/

Chinese experts have collected and systematized the materials associated with the positive effect of epigallocatechin-3-gallate on human health. The list turned out to be impressive.

Among the main characteristics of EGCG the researchers named anticancer, antioxidant, anti-inflammatory, anticollagenase, and antifibrotic action, as well as osteogenesis promotion and autoxidation, which may have a beneficial effect on the cardiovascular system. In addition, epigallocatechin-3-gallate can be useful in oral disease treatment, as well as protect the nervous and vascular systems.

At the same time, experts noted that, despite good in vitro results, the use of epigallocatechin-3-gallate for the treatment of living people is associated with some difficulties. One of the main problems is that a dose of the catechin sufficient for a noticeable therapeutic effect is difficult to obtain naturally, for example, when drinking green tea. But scientists do not lose heart and hope that further research will help resolve this and all other difficulties.

Chlorogenic Acid, Epigallocatechin Gallate and Osteoprotegerin

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5488595/

Japanese scientists have studied the influence of chlorogenic acid and Epigallocatechin gallate on osteoprotegerin synthesis in osteoblasts. In other words, they studied how the coffee component (chlorogenic acid) and the tea component (epigallocatechin gallate) affect the synthesis of a receptor that blocks the formation of osteoclasts (these are giant multinucleate cells that remove bone tissue) and, thereby, strengthens bones. In the course of the study, it was found that chlorogenic acid has no effect on the synthesis of osteoprotegerin, whereas epigallocatechin gallate stimulates this synthesis. Researchers believe that the observed effect can be useful for preventing fractures, especially among the elderly.

Tea and Gastrointestinal Associations in Sweden

https://www.ncbi.nlm.nih.gov/pubmed/28826271

Swedish scientists have studied what foods are associated with gastrointestinal disorders in consumers. After studying the diet and complaints about the state of health of almost 17,000 people, the researchers concluded that wholemeal bread (Swedish cracker) and white bread (low fiber content) are associated with constipation, while juices and soft wholemeal bread (high fiber content) are associated with diarrhea. Cheese was associated with bloating, and soda — with bloating as well as with abdominal pain. Coffee, as expected, was not associated with gastrointestinal disorders. But

high intake of tea, as it turned out, was associated by Swedish consumers with bloating, abdominal pain, and diarrhea.

Despite some specific physiological issues, this study is very interesting as a cross-section of consumer evaluation of the effect of tea in culture, where tea is not a particularly common drink. 300 grams of tea against 8 kilograms of coffee per capita per year, well, or 200 cups of tea against 1000 cups of coffee. In fact, if you translate the averaged values into actual consumers, then it turns out that coffee in Sweden is consumed daily, in large quantities and by lots of people, and tea is most likely consumed by most people extremely rarely.

At the same time, one must understand that gastrointestinal conditions are read quite well by the person himself and are best associated with food and drinks. Well, now imagine the situation when you always drink coffee, by cups, and suddenly decided to drink tea. Your girlfriend made you to do this, for example. Or incidental Russian friends from the KGB. Unusual gastrointestinal experiences associated with the use of tea, in this case, will be inevitable. As with many other products that go beyond the standard diet.

So, there is nothing surprising in the fact that the Swedes, in their own opinion, get bloating and all from tea.

Tea and Alcohol as Components of The Health-Improving Dutch Diet

https://link.springer.com/article/10.1007%2Fs10654-017-0295-2

Dutch specialists have developed a diet that, in their opinion, should reduce the risk of developing a number of chronic diseases in adults. And tested it on almost ten thousand people over 45 years old (the average age was around 64 years). The developed diet included vegetables (≥200 grams per day), fruit (≥200 grams per day), whole grains (≥90 grams per day), legumes (≥135 grams per week), nuts (≥15 per day), dairy products (≥350 grams per day), fish (≥100 grams per week), tea (≥450 ml per day), meat (<300 grams per week), sugar-containing beverages (≤150 ml per day), alcohol (≤10 grams per day) and salt (≤6 grams per day). And it turned out to be healthy, but in a little tricky way. None of the components of this diet had a decisive influence on the risk of developing various bad diseases. But adding each of its components to the diet reduced the risk of mortality, stroke, chronic obstructive pulmonary disease, colorectal cancer and depression by three percent . But at the same time it did not affect the development of type 2 diabetes, heart failure, coronary heart disease, lung cancer, breast cancer and dementia.

But, in general, not bad at all. A pint of tea, a little alcohol, fish and meat — that's what will save us, gentlemen.

Tea and Coffee in The Struggle for Our Health

http://www.telegraph.co.uk/health-fitness/nutrition/diet/tea-vs-coffee-cuppa-should-drinking/

The Telegraph has compiled a selection of scientific studies which examine the influence of tea and coffee on our health. And systematized it by drinks and effects. Like any similar selection, the work of

our British colleagues can be disputed and rebutted in every way, but this does not make it less interesting. Moreover, all statements are confirmed by authoritative references.

So. If you want to live longer, weigh less and make your heart beat faster, decrease cholesterol level, increase alertness and have strong bones, then you need to drink tea. And if you need to resist mean oxidants and have trouble-free digestive system, then your drink is coffee.

6-2 in our favor.

With Tea Candida Species Develop Better, but Attach Themselves Worse

http://jmm.microbiologyresearch.org/content/journal/jmm/10.1099/jmm.0.000555

Australian scientists have studied the effect of four kinds of tea (Puer, Green, Black and Oolong) on the ability of candida species (microscopic yeast-like fungi, some of which cause the development of candidiasis) to create colonies. It turned out that tea retards Candida adhesion to glass surfaces. But, at the same time, tea promotes Candida biofilm formation. In other words, with tea, Candida colonies form quicker, but attach themselves to tissues worse. Researchers believe that, despite such a contradictory result, the use of tea still reduces the likelihood of developing candidiasis in the oral cavity.

Healthy Products Are Healthy, and Unhealthy, on The Contrary, Are Unhealthy

https://www.ncbi.nlm.nih.gov/pubmed/28796304

American scientists have evaluated the products and beverages used for snacking (eating between meal), with NRF (Nutrient Rich Foods) indices NRF 9.3 and NRF 15.3. Roughly speaking, the NRF-index is the difference between healthfulness and harmfulness of a product. Healthfulness and harmfulness are calculated on the basis of the content in the product of useful, encouraged components (9 for NRF 9.3 and 15 for NRF 15.3 — it can be vitamins, fiber, trace minerals, etc.) and components advised to avoid (3 in both index variants — sodium, saturated fat and added sugar). Well, it has turned out that the best snacks (with the highest indices) are coffee/tea and vegetables. And the worst ones are cakes, cookies, other sweets and sodas. For coffee, for example, NRF 9.3 = 524, and for sodas NRF 9.3 = −46. And NRF 15.3 for these drinks is 736 and −45.

In short, snacking with healthy foods, including tea, is good, and snacking with unhealthy food is bad. American scientists believe that this information needs major distribution. So this is our contribution to it.

Matcha Tea Works Best in Drink, Not in Snack Bar

http://www.sciencedirect.com/science/article/pii/S0963996917301941

Dutch scientists have investigated the effect of powdered green tea on people's moods and their ability to perform all sorts of tests. To do this, a small group of volunteers (23 people) tried a drink made from matcha, snack bars with a matcha, a placebo-drink and placebo-bars. Before each tasting and one hour after each tasting, all the volunteers passed some tests. It turned out that after

consuming matcha (either drink, or bars), people better pass tests assessing attention and psychomotor speed in response to stimuli. At the same time, matcha in a drink format proved to be more effective than matcha snack bars, the difference in the tests measuring speed of spatial working memory and delayed picture recognition was particularly noticeable. However the mood was not affected by matcha. Neither in drink nor in snack bar formats.

Tea Is Good For The Health of Caenorhabditis Elegans

https://www.ncbi.nlm.nih.gov/pubmed/28750751

Chinese experts have evaluated the effect of black tea, green tea and puer on the health of free-living nematodes *Caenorhabditis elegans* (non-parasitic, transparent roundworms up to 1 mm long). It turned out that thanks to tea the nematodes can live not only freely, but also longer. Tea postponed Aβ-induced progressive paralysis in Alzheimer's disease transgenic worms and improved the tolerance of worms to the oxidative stress induced by heavy metal Cr6+. Also scientists found out that the effect of green tea at low concentration is different for drinks of different brands — however, the specific brands of teas which make nematodes live longer are not indicated in the abstract of the study.

Antioxidant Properties of Green Tea Aroma

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5525016/

During twenty weeks Japanese specialists were sprinkling with green tea ethanol solution the bedding in the cages for 9-week-old female mice. The bedding was soaked with the tea solution, and at first, it was changed daily, but starting from the fourth week of the experiment — thrice a week. Lab tests of the tea mice and the mice of the control group have demonstrated that the tea mice have a lower level of 8-hydroxydeoxyguanosine in urine and higher antioxidant properties of blood serum. In addition, even if mice were subjected to X-ray irradiation, an increase in the level of 8-hydroxydeoxyguanosine in their urine was suppressed by the aroma of green tea.

Do not repeat this at home, since it wasn't a plain green tea aroma used in the experiments. The source of the fragrance was a steam extract condensate of green tea leaves in ethanol (commercial name — Green Breath®), diluted 5-fold with distilled water.

Antioxidant and Anti-inflammatory Cocoa Tea

http://pubs.rsc.org/en/Content/ArticleLanding/2017/FO/C7FO00368D#!divAbstract

Chinese experts have compared a number of properties of green tea made from *Camellia ptilophylla* and green tea made from *Camellia sinensis*. *Camellia ptilophylla* (often referred to as cocoa tea), a camellia of *Theaceae* family grown in China, is rich in catechins and caffeine. This camellia is not yet very well studied and not particularly wide-spread, but it may have potential for medical use. In vitro experiments on the green tea made from *Camellia ptilophylla* demonstrated that it has a higher antioxidant and anti-inflammatory potential than traditional green tea. Unfortunately, we did not find any information about the taste of green cocoa tea.

Radical Scavenging Activity of Yabukita and Benifuuki
https://www.karger.com/Article/Abstract/477355

German researchers have tested the ability of green teas made from Yabukita and Benifuuki cultivars to protect skin cells from the effects of free radicals. 32 people took part in the experiment, one part of them drank three cups of Yabukita green tea per day, the second — three cups of Benifuuki, and the third one was a control group drinking water. Two weeks later, it was found that the antioxidant effect for the skin in the Yabukita and Benifuuki groups was significantly better than in the control group. Interesting data. Almost as interesting as the fact that they used green tea, made from Benifuuki cultivar.

Benifuuki is a high-yield hybrid of the cultivar MakuraCd86 (pure *sinensis*) brought to Japan from Darjeeling, and Benihomare, a Japanese *assamica* cultivar (selected from Indian seedlings). Benifuuki is often used to produce black tea — and then there is nothing extraordinary in it (except for its being Japanese black tea, of course). But when green tea is made from Benifuuki, it contains significant amount of epigallocatechin-3-O-methyl-gallate, which, for example, is completely absent in tea made from Yabukita.

Methylated catechins have a pronounced antiallergic effect (http://www.sciencedirect.com/science/article/pii/S1756464616301189). Therefore, green tea from Benifuuki is popular in Japan during the cedar pollen season (ideally, one needs to start drinking the tea a month in advance) and is in demand among educated allergy sufferers in other countries.

Tea technologies

Tea Leaf, Activated Carbon and Batteries

http://www.joplinglobe.com/news/local_news/psu-research-team-turns-tea-leaves-into-batteries/article_faf33f3c-97d2-50ee-ba61-9daffcf0b9b2.html

Specialists of Pittsburgh State University are working on batteries, which will use activated carbon made from tea leaves. Two of these technologies — the production of activated carbon from tea residue and the design of batteries using activated carbon — have been long and more or less well known. And now, therefore, it is time to unite them. Researchers say that their main challenge is the consistency of the quality of activated carbon which depends on the characteristics of tea leaves, but they do not lose hope to be able to make tea batteries not only eco-friendly, but also technological, economical and instantly rechargeable.

Drought Stress and Its Effect on The Aroma of Tea

http://www.sciencedirect.com/science/article/pii/S0176161717302444

Chinese scientists have studied the effect of drought on the chemical composition of tea leaves. They have discovered, that slight drought stress stimulates formation of polyphenols in tea leaves, while serious drought stress, on the contrary, inhibits their formation. In addition, the lack of watering enriched some volatile metabolite pathways, that is, in fact, indicates that drought stress might affect the tea aroma.

Fermented Tea Juice and Oolong Tea

https://link.springer.com/article/10.1007%2Fs13197-017-2849-4

Chinese experts have put a series of mysterious experiments with fermented tea juice. Tea juice is obtained by crushing fresh tea leaves, and then one can apply traditional tea methods. For example, the juice can be fixed with boiling water — so it turns into a kind of green tea, quite delicious. Without fixation the tea juice is quickly fermented and you can get an equally original black tea from it. Well, then, the Chinese scientists experimented with the fermented juice, adding brewed oolong tea or fresh tea leaves to it. They found out that both these additives do a power of good to the quality of fermented tea juice: the ratio of “theaflavin / thearubigins” increases, and the taste and aroma improve.

Now, what would you do with this information?

We Still Have Chances Against Robots

https://www.element14.com/community/community/project14/wackyautomationdevices/blog/2017/10/22/automated-tea-dunker

Under the link — a wonderful report on the creation of an automatic thing for dipping tea bags Automated Tea Dunker. It was developed on the Arduino platform with the use of 3D-printing. To

recap briefly: the created unit brews tea with the grace of an enraged garbage truck — and this leaves us some hope for a favorable outcome of the forthcoming evolutionary struggle of tea masters with robots.

They still have areas of weakness.

Tea Residue Makes Good Activated Carbon

http://www.tandfonline.com/doi/abs/10.1080/09593330.2017.1384069

Chinese experts have evaluated the properties of activated carbon obtained from tea residue after two-step pyrolysis and activation with sodium hydroxide. The optimal temperature for activation is 700°C, in this scenario, tea residue turns into activated carbon with a specific surface area of 819 square meters per gram. Good activated carbon, with promising characteristics of phenol adsorption! Although, it falls short of specific surface area and total pore volume characteristics demonstrated by some best examples of activated carbon.

Leafhoppers Can See Everything, It's Becoming More Difficult to Deceive Them

https://www.ncbi.nlm.nih.gov/pubmed/28944748

A group of Chinese and Thai scientists studied the eyesight of the tea green leafhoppers *Empoasca vitis Göthe* (*Jacobiasca formosana* and *Empoasca onukii*) and came to the conclusion that their eyesight (photopic, as it turned out) plays an essential role in their orientation in space. It is precisely with good eyesight that scientists link the fact that leafhoppers do not particularly react to aromatic attractants - until the source of the smell is visible, the leafhoppers do not pay attention to it.

A brief reminder: green tea leafhoppers are insect pests of tea trees. In some cases, however, their damaged leaves produce wonderful tea.

A Tricky System for Recognizing The Astringency of Tea

http://www.jfda-online.com/article/S1021-9498(16)30141-7/fulltext

Taiwanese experts took the challenge of creating a technique that allows to recognize the taste characteristics of tea without the participation of tea tasters. The prerequisites for such work are as follows. During regular and numerous tea competitions in Taiwan, tea experts have to taste hundreds of teas - and there is no way to provide absolutely identical conditions for tasting different samples.

Assuming that tea does not directly affect human taste buds, but through interacting with saliva, Taiwanese experts have developed a solution that partially imitates this saliva. When mixed with tea, brewed in accordance with the standards of the Taiwan Tea Research and Extension Station (for oolong tea — 3 grams of tea per 150 ml of boiling reverse-osmosis water, 6 minute infusion), this imitation solution forms a film, whose thickness allows to assess the astringency of tea.

having gathered a team of five Station specialists and five enthusiasts, the researchers conducted a calibration tasting of four oolongs made from Chin-shin oolong cultivar, grown in different gardens of

Central Taiwan at different altitudes. Then they ran the same teas through their system for the astringency recognition. And the comparative evaluation of the astringency of oolongs, obtained after their analysis by a cunning Taiwanese method, coincided with a comparative assessment of the astringency given by the tasters.

The authors of the methodology, being satisfied with the results at large, note the shortcomings of the developed system. They note the insufficiently accurate imitation of saliva with the solution they use and, as a consequence, the insufficiently accurate work of the entire system. Comparing the results of the new method with the estimates of live tasters, it can be noted, in particular, that estimates of the more astringent teas given by the system and people coincide more than the estimates of less astringent teas.

Scientists themselves expect that after some time they will be able to improve the technique and create a special commercial powder or tablet which could be mixed with tea in order to evaluate relative astringency of the tea samples without tasting them.

Well, and we, I hope, will still live to see formal flavor profiles of the world's main tea. And the most advanced tea connoisseurs of tea will be satisfied with simple reading of the characteristics: “Tartness — 19. Sweetness — 43. Oh! It’s so good!”

And The Refuse Will Make Soap

http://onlinelibrary.wiley.com/doi/10.1002/jsfa.8721/abstract

Chinese scientists have developed a technique for obtaining a detergent from the residue left after the production of tea oil (*Camellia sinensis var. assamica* seed cake). The fact is that these residues are not used in any way, although they contain a large number of saponins. Which, as is known, have surface-active properties and therefore are well foamed. So. Chinese scientists selected the optimal mode for extracting saponins from the tea seed refuse (extracting temperature of 40.04°C, extraction time of 4.97h, ethanol concentration of 64.11% and liquid-solid ratio of 14.57:1 mL g-1), and then made the detergent from the obtained saponins (you can find the composition of the detergent under the link, with tea polyphenols being mentioned there among other things). The developed detergent was tested in mice — and it proved to be non-toxic and to have significantly stronger removal abilities than some commercial detergent.

Tea from Enshi and Backward Interval Partial Least Squares Algorithm

https://link.springer.com/article/10.1007%2Fs10812-017-0533-0

Chinese scientists have tested the effectiveness of determining the quality (and price) of young tea leaves, used to produce Yulu tea, from Enshi with the help of infrared spectroscopy and subsequent processing of the least squares obtained by this method. In the course of the experiment, 108 samples of tea raw materials were selected - they were buds, buds and one leaf, buds and two leaves and buds and three leaves. These samples were evaluated by specialists, then some of them were used to calibrate the system, and the remaining ones were used to test the efficiency of the method. In 97% of

the cases, the “infrared spectrograph + least square algorithm” system determined the quality and price of tea correctly.

Enshi Yulu tea is a famous steamed green geographical-indication tea, produced in the Enshi autonomous region of Hubei province; the protection scope is located in Bajiao Dongzu Township (450 to 850 m above sea level) in Enshi City.

Green Tea, Basil and Biodegradation

http://www.sciencedirect.com/science/article/pii/S0144861717309554

Argentine scientists added extracts of green tea and basil to biodegradable materials from cassava starch and glycerin and were surprised to find that, with this additive, biodegradable materials biodegraded in soil within two weeks, were thermal stable up to 240°C, became less permeable to water vapor, retained flexibility and changed color when interacting with acids.

With a high level of development of science, it is not distinguishable from magic, as is known.

To Swallow or To Spit. That Is The Question

https://www.ncbi.nlm.nih.gov/pubmed/28912088

American experts have studied the relationship between the evaluation of the intensity of tastes and the way the products possessing these tastes were degustated. Despite the fact that the concept of the tongue map is now considered obsolete, being consistently and repeatedly debunked in controlled studies, evidence for regional differences in taste intensity has been noted by multiple research groups. And, accordingly, taste perception depends on the method of tasting. The researchers have hypothesized that if the sample is swallowed, the bitter taste and taste of umami is felt stronger than when it is spit out. To test this hypothesis, two experiments were performed. In the first experiment, participants tasted and evaluated pure flavors (sweet, bitter and umami), in the second they tasted and evaluated specific products (grapefruit juice, salty vegetable stock, savory vegetable stock, iced coffee, and sweetened green tea). It turned out that when all the tasted samples were swallowed, the bitterness indeed was often felt more intensely than with spitting out. Often, but not always. Therefore, the researchers concluded that, the intensity of the perception of taste does depend on the method of tasting. And the tasters should be explicitly instructed to reduce the influence of this dependence on the result of the tasting.

Organic-inorganic Nanobio-antimicrobial Agent

http://pubs.rsc.org/en/content/articlehtml/2017/ra/c7ra07618e

Turkish experts have studied the antibacterial potential of “nanoflowers” collected from green tea extracts and its components (caffeine and catechins), and copper ions. The scientists tested this organic-inorganic nanobio-antimicrobial compound on the bacteria *Staphylococcus aureus*, *Escherichia coli* and *Candida albicans*, got convinced of its sufficient antimicrobial efficacy and concluded that tea nanoflowers can be successfully used to solve various applied problems, including the care of skin and hair.

Selective Decaffeination of Tea Extracts by Montmorillonite

http://www.sciencedirect.com/science/article/pii/S0260877416304575

Japanese scientists have found that when filtering tea through montmorillonite, caffeine is adsorbed without significant binding to catechins, whereas activated carbon, for example, filters both caffeine and catechins. The taste of the extract decaffeinated by montmorillonite was not significantly altered, which is good.

Montmorillonite is a strongly swelling clay mineral that has pronounced sorption properties and is often used in the oil, textile, paper and soap industries as an active component of bleaching and fulling clays; it is also used worldwide in the food industry.

Green Tea Against Polymerization of Heated Rapeseed Oil

http://www.sciencedirect.com/science/article/pii/S030881461731169X

Polish scientists have studied the ability of natural antioxidants to prevent the polymerization of rapeseed oil when heated. It turned out that among all the studied sources of natural antioxidants, ethanolic extracts of green and yellow tea, followed by blackberries, prevented the polymerization of the oil best of all; they worked better than ionol, and surpassed the anti-polymerization properties of cranberries and lime (or lemon).

Pyrolysis of Tea Branches

http://www.sciencedirect.com/science/article/pii/S0960852417307381

Tea shrubs are known to be trees that are simply not let grow. Because if they do grow, it becomes inconvenient to collect tea leaves. That is why for a huge number of tea plantations, a technological operation of pruning is mandatory. After which you need to do something with heaps of cut branches. For example, you can try to make post-fermented tea from them, as is done in Japan. Or recycle them for mulch and fertilizers, as is sometimes done elsewhere. Or just throw it away or burn it — which also happens very often.

Of course, it's a somewhat wasteful way to handle the product, even if it's only a by-product, of an inevitable technological procedure. Therefore, scientists in different countries have long been looking for ways to efficiently process agricultural tea waste. Some of them, for example, try to extract caffeine. Others test how tea branches undergo pyrolysis. Actually, it was pyrolysis that interested Chinese specialists. The usual products of wood pyrolysis are charcoal, tar and various gases (including methane and hydrogen) — and hardly the branches of the tea bush are an exception here. Chinese experts studied the nature of "tea pyrolysis", determined the boundary of the first and second reaction range (350.77°C) and obtained some more purely technical data that look convincing but unreadable for us.

If everything goes as it usually does in the tea market, then very soon there will be small bags of charcoal from single tea trees from the Phoenix Mountain. And cylinders with methane from Da Hong Pao, collected from four mother bushes once in three years.

Tea-pea-and-rice Noodles

http://www.sciencedirect.com/science/article/pii/S0308814617308385

Instant noodles, as you know, is one of the pillars of the modern food market. However, the most common variant of noodles — wheat ones — does not suit all consumers, due to the gluten content, for example. Therefore, noodle manufacturers have long and persistently sought replacement of wheat, not only dietary, but, if one may say so, mechanical. A good alternative to wheat is rice — but rice did not make dough suitable for making instant noodles. Only when scientists from the Republic of Korea added pea protein extract and green tea extract to rice, the rice dough got the right viscosity, and the noodles made from it became not only tasty, but also healthy.

Jumping Spiders against Biting Leafhoppers

https://www.nature.com/articles/s41598-017-07668-w

In one of the previous notes, we wrote about the fact that Chinese scientists are looking for ways to effectively attract *Empoasca vitis* tea leafhoppers and no less effective ways to kill them. You might remember that *Empoasca vitis*, *Jacobiasca formosana* and *Empoasca onukii* are all the name of one and the same insect, which, depending on the circumstances, can be a harmful pest or a useful pest. In the first case, tea farmers try to get rid of the tea green leafhopper so that it wouldn't not damage tea buds and leaves, in the second — they try to attract it to damage the tea buds and leaves (from which later special tea is made, for example, Taiwanese Dong Feng Mei Ren).

So. Having studied the contents of the guts of spiders inhabiting tea plantations, the researchers found that the remains of leafhoppers are most often found in the gut of the jumping spider *Evarcha albaria* — and concluded that this particular spider is the most dangerous natural enemy of tea green leafhoppers.

Plant Growth Promoting and Antifungal Potential of Rhizobacteria

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0182302

Indian specialists have conducted a complex of studies to evaluate the plant growth promoting and antifungal potential of rhizobacteria from Darjeeling. For this purpose, the scientists first took soil samples from seven Darjeeling gardens (Gielle, Teesta Valley, Barnesbeg, Rangli-Rangliot, Namring, North-Tukvar and Ging) and isolated 150 indigenous tea rhizobacteria from them. Then the antifungal potential of these isolates was tested on several kinds of fungi harmful to the tea bush (one third of the isolates suppressed the development of at least one pathogenic fungus, while two isolates suppressed all of the fungi). After that, based on a complex of characteristics, the growth-promoting potential of the isolates was evaluated. And then, having put together all the data and excluded those isolates of rhizobacteria that could be potentially dangerous for humans, the experts identified four

isolates with the most rosy prospects and tested them rosy prospects in two tea commercial cultivars TV-1 and Teenali-17 in nursery conditions.

Well, everything turned out well, of course. With the participation of selected rhizobacteria, tea bushes grew faster and healthier. And now, the researchers suggest using rhizobacteria as an alternative to mineral fertilizers and chemical fungicides when growing tea in Darjeeling.

Tea Saponins to Save Sea Cucumbers from Nuisance of The Moon Jellyfish

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0182787

Sea cucumber is an important commercial marine animal in Southeast Asia. Moon jellyfish (*Aurelia sp.1*) is a jellyfish that can greatly damage the sea cucumber and, accordingly, its presence in the sea cucumber (*Apostichopus japonicus*) culture ponds is undesirable. Chinese scientists have tried to feed the annoying aurelias with tea saponins. As it turned out, even relatively small doses of saponins (which, as you may remember, result in a lower milk yield in young Holstein cows) cause significant morphological changes, behavioral abnormality and mortality in moon jellyfish ephyrae and polyps. Whereas the resistance to tea saponins of sea cucumbers appeared to be 12-18 times greater than that of moon jellyfish.

So, now, it seems, sea cucumbers can breathe freely.

Tea Saponins on Milk Performance of Young Holstein Cows

https://www.ncbi.nlm.nih.gov/pubmed/28755948

Chinese specialists divided twenty young Holstein cows into four groups, three of which were given the supplementation of tea saponins in different doses (the fourth group was a control group and was on a saponin-free diet). During six weeks, the researchers were studying the appetite, blood and milk of cows and came to the following conclusions. Smaller doses of tea saponins in the feed (20 and 30 grams per day) do not significantly affect the appetite of cows. But the group that received 40 grams of saponins a day, ate less, which resulted in a lower milk yield. The supplementation of tea saponins at any dosage reduced oxidative stress in cows and improved their immunity. Also, the use of saponins affected some characteristics of milk, but this effect was short-term, the cows adapted to saponins by the fourth week of the experiment.

Tea Growing Potential of Mississippi

https://sites.tufts.edu/gis/files/2016/01/Smyrnos_Taylor_GIS101_2015.pdf

Tufts University website has published a study assessing the suitability of Mississippi lands for the use under tea plantations in 2015 and in 2050. The following factors were used to create the suitability maps: mean annual precipitation and temperature, slope, land availability and soil drainage in different parts of the state, as well as climate change predictions for the coming years.

The most attractive sites from the tea point of view are in the south of the state. However, according to the forecast, by the year 2050 the tea attractiveness of the best parts of the Mississippi will

decrease, while the tea attractiveness of many areas not so much suitable for growing tea at the present time will increase.

The Great Mississippi Tea Company, one of the US tea growing companies, is located in Mississippi, right in one of the most suitable for tea growing areas; and it is already planning expanding their territory and commercial operation.

Tea events and phenomena

On Beauty and Animals

http://www.cajne-kronike.com/tea-magazine/

Beginning of an emotional paragraph. While almost everywhere in the world the meeting of tea with animals turns into drama (elephants trample tea plantations, scientists forcibly feed mice and bream with tea, and so on and so forth), there are people who are thinking about peaceful and beautiful coexistence of all children of nature. End of an emotional paragraph.

Teabento online store (Germany) sells pretty tea, arranges it into animalistic presentation pictures and gives it cute names. Jasmine pearls tea, for example, is called Sweet Mouse and is presented with a picture of a mouse laid with tea; and Taiwanese Assamica is called Sun Moon Serow and is shaped as a goat. Here's the site: https://teabento.com/, here's their facebook page: https://www.facebook.com/teabento.social/ — enjoy!

Tea Against Everything and For Everything

https://yourtea.com

Some words about stylistic impeccability. Your Tea is a project that specializes in tea blends for all occasions. Tea against hangover, fatigue, or anxiety, for sleep, for sex, for pure skin, for happiness and for cleansing everything that needs to be cleansed. And some of these teas are carefully arranged in thematic sets. Such a set for men, for example, includes blends for quiet sleep and hangover relief, energy mixture and just tea for men, made up of black tea, green tea and liquorice root. 12 bags for 12 euros. It comes out cheaper if you buy men teas not in the set, but as separate items — 35 euros for 60 bags. There's also women's tea in Your Tea. Oolong, chrysanthemum, ginger and goji berries — and all this is noticeably cheaper than the men's one (60 bags for 25 euros). And there is also matcha, of course — elegantly packed with a chasen. As it should be, it is rich in antioxidants, it detoxifies, reduces weight, increases immunity and improves energy.

The abovementioned Hangover Tea , by the way, is a source of joyful amazement in general. Firstly, until the age of fifteen, it is recommended to drink it, asking permission from the parents ("Mom, can I drink anti-hangover tea?"). After fifteen no permission is needed, and the friends will check it out and appreciate. Secondly, it is recommended to drink twice a day. And, finally, thirdly, the composition of this drink, along with banal oolong, chamomile, dandelions and kudzu flower, includes tangerine peel.

There's a huge number of people, living in this vast world, who can not imagine a hangover without tangerine or mandarin peels lying all around the place. And the inclusion of these peels into a hangover blend is certainly a sympathetic magic of higher order. And in all the rest, Your Tea is a very optimistic project.

Tea and Sugar Monsters

https://www.bustle.com/p/where-to-get-cotton-candy-tea-so-you-can-get-ahead-of-the-next-big-drink-trend-3065201

After the advancement of such a thing as tea with toppings, it became senseless to follow different tea innovations. It is clear that you can add whatever on top of a glass of tea. A cheese cap, whipped cream, some tricky ice cream — there is no limit to fantasy. Sometimes, however, the fantasies turn out completely unexpected. Here, for example, the guys from Snow Monster (http://snowmonsteroc.com/) put a huge cap of cotton candy on their own tea (already original enough). With a lonely drinking straw sticking out of it.

Everything becomes queerer and queerer.

Fandom Tea and Accessories

http://www.teaandabsinthe.com/geekytea/

In the US, there is a small company Tea & Absinthe, specializing in the sales of fandom-inspired tea blends and utensils. The main sales of such a tea occur on different events — fan meetings, where everyone dresses up as Sarah Kerrigan, Hermione, or some other pretty girl. Just recently, for example, colleagues from Tea & Absinthe made blends dedicated to the faculties of Hogwarts — where Ravenclaw tea smells smart and Hufflepuff smells of warmth, cookies and kitchen. Even in this mysterious store you can buy a pint glass with Maria Curie, plesiosaur-shaped tea infuser and a series of TARDIS-teas that will warm your soul if you are a fan of Doctor Who.

In short, the idea is plausible. And replicable. Fandom moonshine can also go well.

Tea Infused Mattress

https://www.zinus.com/products/pressure-relief-green-tea-mattress

Zinus.com presents Pressure Relief Green Tea Memory Foam Mattress — a mattress with green tea extract, which, according to sellers, will allow you to spread around yourself not the fragrance of sleep, but the fragrance of freshness and all other pleasant things. A useful thing, no doubt.

Soup Teas

https://www.davidstea.com/us_en/soupteas

The DAVIDsTEA chain, which operates in Canada and the USA and specializes in flavored teas with pieces of all kinds of different stuff, has launched a line of soup teas. The product looks like this: it's a small bag with a complex mixture, which can include, for example, green tea, tomatoes, garlic, turmeric, parsley and salt. This mixture can be simply diluted with water and consumed like this; you can also use it as a broth for cooking borsch or any other soup; or you can add it as an ingredient to a different recipe when cooking. For example, the sellers of this curiosity suggest marinating slices of feta in such a soup tea.

Transparent “Tea” with Milk Flavor

http://www.suntory.co.jp/softdrink/news/pr/article/SBF0570.html

Japan’s Suntory (the one that, among other things, produces the eponymous whiskey) creates a line of soft drinks with a taste of tea and all sorts of other things. The main feature of these drinks is their transparency and, if I may say so, honest chemistry. That is, instead of the traditional approach for bottled tea, in which a rather vigorous mixture of flavorings and colorants can be called tea, Suntory offers a product that is explicitly called flavored water, but at the same time has relatively few additives (although no tea whatsoever).

The first drink of the series was Premium Morning Tea Lemon, released in April. The second drink will be Premium Morning Tea Milk with the flavor of Assam tea and milk. The beverage itself is difficult to assess in absentia, but the approach is redeeming.

Punk Afternoon Tea

http://punk.london/anarch-tea-at-w-london/

Only until October 1, the W London hotel will serve a special and almost classic Afternoon tea with cakes in bold punk-inspired designs, dedicated to different cult and punk songs. For example, “God Save the Queen – The Sex Pistols”. This punk tea service is called Anarch-Tea, it is presented, of course, as a tea without rules, but this, given the Afternoon tea traditions, is hard to believe.

On the whole, it looks cute. And punks will never die. Because they drink tea.

Craftea. Electric Kettle with a Stirrer

http://www.craftea.com/

We continue monitoring different tea machines, even if they appeared on the market not now, but, say, a couple of years ago. Here, for example, Craftea. It is, in fact, an electric kettle combined with a brewer and “trained” to adjust water temperature and infusion time. In addition, it has several preset programs (for different types of tea) and a system of text prompts such as “pour water” and “add tea”. Everything would be absolutely trivial, but for the stirrer at the bottom of the brewing compartment (vortex technology), which constantly mixes the tea to be brewed, thus reducing the time of infusion and allowing to thoroughly mix ingredients of complex drinks like tea with milk and spices.

Only 199 USD for small mechanization.

Tea Ceremony by Tom Sachs

http://nashersculpturecenter.org/art/exhibitions/exhibition?id=478

Tom Sachs is a contemporary American artist-appropriationist (or an appropriator). And Tom Sachs: Tea Ceremony is his interpretation of the classical Japanese tea ceremony with the use of objects conveying different meanings. With an indispensable lavatory — probably, because an appropriation is

not counted as such without reference to Duchamp. And with lanterns, elements of construction aesthetics, a chasen with a motor and other eclectic pieces.

The exhibit will work until January 7 at the Nasher Sculpture Center, in Dallas. Or else, you can enjoy the photos under the link.

Tea Masters Cup. Start of a New Season

https://www.facebook.com/teamasterscuprussia/

On September 11, 12 and 13, the regional qualifying tournaments of the Tea Masters Cup Russia series 2017-2018 in Tea Preparation, Tea Pairing and Tea Tasting categories were held in Moscow. The main tea theme of the tournament was Hunan tea. Teas from Hunan Province of China were tasted by 19 participants of the Tea tasting category, they also became the basis of Organizers' Tea and Organizers' Composition. The winners of this Tea Masters Cup tournament will represent Moscow at the national final of TMC Russia, which will be held in March 2018.

September Tea in St Petersburg

In St. Petersburg, first on September 17 in the apartment of Kostya Kreutz, and then on September 23-24 in the Botanical Garden, absolutely wonderful tea meetings will take place.

The Festival of Tea Culture in the apartment of Kostya Kreutz (http://letters.kreutzflat.com/17/09) will gather tea specialists and collectors, ceramists and musicians, perfumers and simply good people, who will tell each other and guests of the Festival entertaining and instructive stories about tea and other interesting phenomena of the world around us.

The main themes of the eco-festival "Tea-rrific Garden" (https://vk.com/neobotsad) are ecology of environment, ecology of soul and ecology of home — and a variety of tea-drinking traditions and tea master classes accord with these topics perfectly. Yunnan tea and yerba mate, tea ceremonies and samovars, an excellent platform and an open format.

In short, there's going to be an interesting tea program on the two nearest weekends in St. Petersburg.

Tea With Virtual Flowers

http://www.maison-objet.com/en/paris

On September 8, the MAISON & OBJET biannual exhibition opens in Paris. At this exhibition, which demonstrates different solutions for the design of residential and public spaces, TeamLab studio will present a laser show integrated into a tea party. The show takes place in the dark: virtual laser flowers appear in the bowls on the surface of tea, and when the cup is removed (for example, the guest takes it), the flower remains on the table for a moment, but then floral petals scatter and spread across the table and surrounding area.

While this whole thing looks simple, the potential for combining tea parties and all sorts of fashionable visualizations is huge. So we are looking forward to laser geishas. Here is the video: https://www.teamlab.art/w/wasoteahouse/, and here is the link to the exhibition site: http://www.maison-objet.com/en/paris.

Pink Afternoon Tea With Sketches

https://www.forbes.com/sites/jennguyen/2017/08/29/sketch-london-a-tea-experience-surrounded-in-art/

Sketch London Restaurant, a part of David Shrigley's project The Gallery, serves traditional English Afternoon Tea for its guests in a somewhat unconventional style. Firstly, the restaurant itself is not very usual — it is all very pink. Secondly, all of its walls are hung with amusing drawings by David Shrigley himself. Well, tea drinking with light hints of Alice's adventures in the Wonderland served in traditional, champagne or children's versions looks very much natural in all this pink and artistic interior. Moreover, there you can have ice tea made with Sketch's own brand of champagne.

Sometimes, there arises a strong feeling that there is nothing more traditional than unconventional English Afternoon Tea.

The Right Tea Gift

http://aa.com.tr/en/asia-pacific/turkey-gifts-tea-processing-plant-to-pakistan/894365

Turkey has presented Pakistan with a tea-processing plant for the production of black tea with a productivity of 400 to 500 kilograms of tea per day. The plant will be installed at tea plantations near the city of Mansehra, its commissioning is scheduled for April 2018. Currently, Pakistan imports 170-180 thousand tons of tea annually, being one of the largest tea importers in the world (the basis of Pakistani tea imports is Kenyan tea) and a country with a developed consumer tea culture. An average Pakistani consumes about a kilogram of tea yearly this tea is often consumed as a part of drinks prepared according to different, sometimes very specific, recipes. The annual 150 tons of Pakistan's own tea produced by Turkish technologies will not change much in the country's market, but will be guaranteed successful — especially given that the new tea will most probably fit into the usual consumer schemes excellently.

Tea Machines: Gourmia Tea-Square and Sharp Tea-Ceré

With very few exceptions, there is one fundamental flaw in tea machines — they prepare tea not in the least better than one can do it without any machine. But understanding this simple fact does not prevent us from following with interest various models of tea machines. Here's one more couple of them.

Gourmia GTC8000 Tea-Square (http://www.gourmia.com/item.asp?item=10131) is a completely ordinary tea-maker of unusual and cute shape with laconic settings. It is unclear why it is needed, but their promo video is cheerful, they promise magic steam over the cup and safety parameters protecting you from spilling tea on the pants, if suddenly someone forgets to put the carafe in the right place.

Sharp Tea-Ceré (http://www.sharpusa.com/Home/ForHome/HomeAppliances/TeaMakers/models/TET56UGR.aspx) is a more serious machine. It grinds green tea into powder (finely for tea or coarsely for cooking and household cosmetics), then it makes the owner transfer the powder into another container, boils the water, cools it to 70 or 80 degrees, and whisks ground tea in this water, or in milk, if you wish. Here's the video: https://www.youtube.com/watch?v=q6hj4FdzgpU.

A saddening thing in this machine is that one has to transport tea powder from one container to another oneself. But the Russian localization of the machine is infinitely pleasing (here's the video: https://www.youtube.com/watch?v=DDG_E9b6TDA). The original name, “Tea Ceré” was prudishly not mentioned, the matcha tea name was also shyly omitted, so in our market the machine is called “Ocha-Tech”. And that's fine.

Tea in Exchange for Fighters

http://www.hindustantimes.com/world-news/tea-coffee-in-exchange-for-sukhoi-jets-indonesia-russia-sign-new-deal/story-qoluD6YSj8e7LWRR0xVyVM.html

Russia and Indonesia are preparing a barter deal, according to which Russia will supply Sukhoi Su-35s jets to Indonesia, and Indonesia will supply tea, coffee, palm oil and other commodities to Russia.

Commenting on this news, one could recall other tea-weapons deals and declare the exchange of tea for fighters as the cornerstone of the Russian tea trade tradition in general. Or remember the hypothesis stating that such transactions of the USSR with India at one time slightly downshifted the English tea culture. But let's not stir up the past and think about the future. In which, perhaps, Indonesian tea will be more widely represented in Russia and if marketers have the courage, it will be sold in packs picturing beautiful airplanes.

Sharp Decline in Darjeeling Tea Production

http://timesofindia.indiatimes.com/city/kolkata/stocks-dry-up-darjeeling-tea-set-to-vanish-from-auction-private-sale/articleshow/59827528.cms

This year, because of the continuing strikes led by Gorkha Janmukti Morcha party in West Bengal, the production of Darjeeling tea was critically reduced. On the 32nd week of tea auctions, only 201 tea sacks (20 kilograms each) from Darjeeling were declared for auction. Last year, about 5000 sacks of Darjeeling were traded via auction on week 32. It is predicted that after the 32nd week, arrival of Darjeeling leaves will dry up and, for the first time in 156 years, Darjeeling tea will cease to enter the wholesale markets worldwide. This does not mean that tea from the famous region will completely disappear from the market, only 15-25% of Darjeeling is sold through auctions, the rest of the tea is sold directly by the gardens. But already now, we can say that the amount of Darjeeling produced in 2017 will be around two times less than in 2016.

It is also worth mentioning that Nepalese tea — the closest competitor of Darjeeling — is supplied to the market steadily and has every chance to put pressure on its Indian elder brother.

Starbucks Is Closing Its Teavana Stores

http://fortune.com/2017/07/27/starbucks-closing-teavana-stores/

Before spring 2018, Starbucks plans to close all 379 Teavana tea stores, which specialize in selling loose tea, teaware and different tea gifts. Teavana stores operate in malls and, assumingly, it is the decline in the popularity of malls that has become one of the factors of the project's failure.

Starbucks acquired the Teavana chain in 2012, planning to benefit from the tea trend and use tea as a key to the Asian market. Closure of stores does not mean the complete withdrawal of Teavana tea from the market — it will be sold in other establishments of Starbucks, and, most likely, will continue to be sold on-line.

Afternoon Tea with Candy Floss, Bus and Gin

London hotel One Aldwych has announced a traditional Afternoon tea menu inspired by Charlie and the Chocolate Factory book and movie, the snack set of which, in addition to traditional sandwiches and various hors d'oeuvres, includes theme-based delicious confectionery, e.g. golden chocolate eggs filled with vanilla cheesecake and mango, Chocolate caramel milk, blueberry brioche. But the coolest thing there is homemade candy floss. Which adds the serving a noticeable note of a little crazy solemnity. Here are the illustrations and the menu: http://www.onealdwych.com/food-drink/afternoon-tea.

Another interesting London tea project — vintage double-decker buses, which roll around London and serve Afternoon Tea. In this one, for example, tea is preceded by a salad, and then accompanied by sushi, standard tea snacks and gin: http://london.b-bakery.com/afternoon-tea/sushi-and-gin-bus-tour/.

Well, that is, you're riding a double-decker bus through London, drunk. trying to catch sushi with chopsticks — and it's all called classic English Afternoon tea.

Tea traditions

Chili Pepper, Please

http://www.lcsun-news.com/story/entertainment/2017/10/19/old-barrel-tea-offers-unique-selection-loose-leaf-tea-and-spices/746148001/

In Mexico, in New Mexico, there is a chain of four small tea shops with a true Mexican name Old Barrel Tea & Spice Company and a few wonderful nuances. First, the interior. When you look at all these barrel tables, the thought immediately comes to mind that the current store owners have taken possession of a drinking saloon and began to trade in tea and spices there. Second, at first glance, the Old Barrel Tea & Spice Company perfectly fits into the local consumer tea culture. Convenient tin cans with tea, tea spoons, stainless steel infusers, a recommendation to add honey (which they also sell) to tea — all this makes it possible to get an idea, though superficial, of how they drink tea in Mexico. Third, on the project website you can create your own blend (https://www.oldbarreltea.com/store/p115/Custom_Blended_Jar_.html), and, interestingly, their tricky system does not allow mixing some of the things. For example, you can not mix mate with vanilla rooibos. Fourth, in the Old Barrel Tea & Spice Company they sell tea not by weight, but by volume. One jar, two tins — and so on, and it's beautiful. Well, finally, fifth, their product line. This one, for example: a mixture of black tea, chocolate chips, fried mate, marigolds, cocoa beans, coca powder, cinnamon, nuts and chili powder.

It must be a hot thing. Here's their web-site, https://www.oldbarreltea.com/, and here's the Facebook page: https://www.facebook.com/oldbarrelteaco/.

Modern Tea Houses and Tea Spaces

It is long time that teapots and tea houses became objects of not only tea culture, they are actively developed as separate design objects by artists . This is quite understandable — compactness, a set of functional limitations and a tried and tested aesthetic tradition make work with teapots and tea spaces very interesting for non-tea professionals. Well, and we are not offended here, of course.

Japanese architect Kazuya Katagiri created a small tea house, assembled with no adhesive, from four thousand sheets of paper, each of them being folded eight times. The origami house is durable, mobile, but, of course, fire-prone: http://newatlas.com/origami-paper-tea-house-katagiri/50998/.

As a maximum contrast with a small and paper tea house from Japan, please consider a large and concrete tea house from China. More convenient and functional. And also very beautiful: https://www.designboom.com/architecture/dna-architecture-and-design-damushan-tea-house-china-11-28-2015/.

But a metal tea house, created by a Dutch studio from two bunkers in the middle of the XX century. Not bad, in a gloomy Teutonic style with playful Dutch notes: https://www.unstudio.com/en/page/3274/tea-house-on-bunker.

And, of course, besides tea houses made of paper, concrete and metal, there are also the ones made of glass, almost completely. Here, for example, Kou-An Glass Tea House (author — Tokujin Yoshioka) — it is installed in the courtyard of a Japanese temple, which, in turn, is located on the mountain. In addition to pure and transparent beauty, this tea house also has a refracted beauty — in this tea house you can catch rainbows: https://www.dezeen.com/2015/04/24/tokujin-yoshioka-kou-an-glass-tea-house-kyoto-japanese-temple/. A Glass Tea House Mondrian by Hiroshi Sugimoto was built in Venice, on the island of San Giorgio Maggiore, and it is a glass cube set over the pool: https://www.dezeen.com/2014/06/19/glass-tea-house-mondrian-hiroshi-sugimoto-venice/.

Modern designers are also good working with wood, by the way. Here is a joint project of the London studio 6a Architects and students of Cardiff University: https://www.dezeen.com/2011/06/19/teahouse-by-takeshi-hayatsu-and-kristin-trommler/. It is made of wooden beams and coppiced hazel wands and resembles both a wicker basket and a children's tree house.

But, of course, modern tea houses are interesting not only with materials and are not always shamelessly modernist. Japanese studio Kengo Kuma has established a tea house of traditional stylistics in a not-very-traditional place: a terrace on the nineteenth floor of one of Vancouver's buildings. Apparently, this is a private tea space, which, of course, causes legitimate and admiring envy: http://kkaa.co.jp/works/architecture/vancouver-tea-house/, http://harttipton.com/?Portfolio=westbank-kengo-kuma-architect-teahouse.

Space Modification Unit, a Hong Kong-based studio, has developed the tea space Dehui Tea Space, which is realized in very light colors and, frankly, is almost the only true tea space. Not a room, house or corner: http://www.s-mu.com/tea-space/.

And here are links to a few more concepts and projects. One: https://www.e-architect.co.uk/china/riverside-teahouse-sichuan. Two: https://www.dezeen.com/tag/tea-houses/. Three: http://www.homedsgn.com/tag/tea-house/.

Afternoon Tea Week: Where To Go in London (Men's Version)

http://www.gq-magazine.co.uk/article/best-afternoon-tea-in-london-for-men

We continue publishing news related to the ongoing UK Afternoon Tea Week. GQ has selected five tea places in London, where gentlemen should go in order to consolidate their gentility. With recommendations for ordering and further behavior. A very good idea by the way — to advise where to go after tea. Well, the problem is, of course, very specific — after beer, for example, you'd never have any doubts on where to go. However, away with irony, the places are interesting indeed.

The review opens with The Ritz. Well, it's all clear: those, who did not drink tea there, are not gentlemen at all, if only because they could not collect themselves, a jacket, a tie and 54 pounds in one place and at the same time. The next stop is The Modern Pantry, where dress code is not so strict and they promise fantastic snacks. The Intercontinental London Park Lane offers an hour and a half of unlimited champagne — and this is the best of the known variations of the classic British Afternoon

tea. Tea drinking in Aqua Shard is a tea party on the 31st floor, it seems difficult to arrange a higher tea in London. And finally, in Sosharu they promise an afternoon tea with expressive Japanese elements.

Geisha, tsunami, sake, hara-kiri, that's what is killing us, gentlemen.

Why Are There No Tea Bars in the UK?

https://www.theguardian.com/global/2017/aug/14/steep-tea-bars-uk-coffee

The Guardian has published a short article explaining the absence of tea bars in England, which is especially noticeable when comparing England with the United States, where specialized bars are one of the drivers of the tea market. Alexi Duggins, the author of the article, and his tea companions explain the non-barness of English tea by the following reasons.

First, almost any Englishman, unlike almost any American, can prepare tea at home. For this purpose they have both necessary equipment (like kettle and teapot) and skills. Secondly, for most English people, tea is a cheap and easy-to-drink beverage — and they do not understand why to overpay for it at a bar. Especially given that teamen haven't yet managed to convince the British that a bartender can prepare tea better than they themselves can do it at home, (it worked with coffee though, and not only in England). Thirdly, in England tea is associated with comfort and coziness which the bar lacks. Tea is drunk in a warm homey atmosphere, and not in a dynamic interior. And, finally, fourthly, the offer of those establishments that begin to specialize in tea and roll out tea cards with more than one hundred teas scare their guests who prefer to order coffee instead.

The article puts some hope on tea pubs — establishments oriented to passing the time and communicating in a pleasant atmosphere, where it would be possible to serve different drinks, and use new ways of preparing and serving tea.

This was the concept launched not that long ago by the Brew Tea Pub project (http://www.brewteapub.com/), its creators are trying to combine delicious tea, purely English habits and special features, such as using beer tools for tea making.

Afternoon Tea Week — 11 London's Variations

http://metro.co.uk/2017/08/14/afternoon-tea-week-11-of-londons-quirkiest-afternoon-teas-6846743/

It is Afternoon Tea Week in Great Britain. This week is held annually from 2010 during the second full week of August. The main purpose of this event is to support the most famous British tradition, and to celebrate Anna Russell, the 7th Duchess of Bedford, best remembered as the creator of the Afternoon tea tradition. During Afternoon Tea Week, different establishments have special offers on tea-drinking and serve it in all sorts of fashion, creating trends for the new season.

Under the link, you will find a selection of 11 London's variations of Afternoon Tea, which Metro observers considered the quirkiest and the most suitable to celebrate the Afternoon Tea Week.

Spanish, Chocolatey, Dim Sum, Japanese, Nordic, Cheesy, Indian, Historical, Healthy, Magical and Literary Afternoon teas. Illustrations are inviting. Well, and mid-August, of course, seems a pleasant time to visit London.

Here is the web-site of the project: http://www.afternoontea.co.uk/uk/

Cream Ghosts and Sugar Cobwebs

Advanced tea community, working in the "offers and promotions" style (a new tea or tea-drinking for a week or a month, and then looking for a new occasion for the next tea or tea-drinking), is getting ready for the coming Halloween. Most often, such special offers do not go beyond new menu designs, eyed sandwiches, caramel cobwebs and cakes in the form of pumpkins and other spooky things. But there are more interesting options.

For example, in the Lancaster London Hotel they decided to be inspired by the atmosphere of old horror movies — so they willserve gloomy black and white snacks with smoke (https://www.royallancaster.com/promotions/halloween-afternoon-tea/), screening Hitchcock movies, distributing popcorn in coffins and generally giving the guests a "cold welcome" (a quote from the site, without specifications).

And, the already mentioned in one of our previous announcements London tea bus will be traditionally perfect. Spiders, worms, orange balls and napkins there, of course, will be rather standard. But the chance to really get scared in this bus is still the biggest. All you need is the driver slamming on the brakes: http://www.afternoontea.co.uk/uk/london/covent-garden/b-afternoon-tea-bus-tour/offers/halloween-afternoon-tea-aboard-the-b-bus -tour/.

Tea recipes

Tea-based Drinks Coffee-style

http://www.southbendtribune.com/news/business/marketbasket/unique-tea-bar-quietly-launches-inside-mishawaka-s-primal-kitchen/article_43e88047-c429-5f50-8877-e0bd7d301511.html

Some time ago we wrote about coffee-style tea experiments by Postcard Teas specialists for Prufrock Coffee café (London). The main idea of those experiments was to concoct a very strong tea drink, comparable in texture with espresso — and then prepare on its basis standard derivatives with milk.

In fact, if you set yourself the task of creating a special range of teas for a café, then this approach is very reasonable. Tea-based drinks made according to the coffee scheme are, first, palatable (just add more milk and sugar if something's wrong); secondly, it is difficult to reproduce them at home without special equipment and special skills; and, thirdly, they can be diverse.

So it's not surprising that the English realization of tea in the coffee style was not the only one. To implement the scheme "strong tea base and milk in various ways" colleagues from Mishawaka, Indiana of the Teaspressa project (https://teaspressa.com/, https://www.facebook.com/teaspressa/) use a range of coffee equipment: aeropress, french press, pour over, moka pot — all these devices are good for preparing strong tea. And then you add milk and sugar.

Recipes developed in Teaspressa are adapted both to home use (so the coffee devices chosen for this are the ones applicable for homes), and to cafés. And they are not very demanding on the quality of tea. And they noticeably increase tea leaf consumption. Which is very good, in fact.

Of course, the tea siphon would also perfectly fit in this scheme (http://goodtea.ru/siphon.php). As an intermediate option between simple devices and more complicated devices, but also more attractive.

Beer with Tea Does Not Smell Like Tea Beer with Water

http://www.sciencedirect.com/science/article/pii/S0308814615300881

A group of scientists from Belgium, China and the US brewed beer from black tea, green tea and oolong tea to compare the aroma of tea beer diluted with water with the aroma of regular beer diluted with tea. Using triangular sensory test and gas chromatography. They found out that the aromas of the two types of mixed drinks under study differ significantly, moreover, and in the aroma of tea beer diluted with water, and in the aroma of regular beer diluted with tea, there are marker volatile substances that unambiguously characterize the drink. Also, the researchers concluded that the relative concentrations of many typical tea volatiles were significantly changed after the brewing process. More interestingly, the behavior of yeast fermentation was influenced by tea components.

Tea With Juniper Berries

Any modern consumer tea culture has a pre-tea history. At the time when tea came to a particular country or region, the people who inhabited this country or region made all kinds of infusions and

decoctions from different vegetable matter. And, of course, these infusions-decoctions have not been lost, they perfectly coexist with tea, and sometimes they mix with it.

In different countries and regions, these infusions-decoctions are different due to different vegetative resources. To see how divers it could be, it's enough to take a closer look at the most popular herbal teas in different regions of Russia. Well, beyond Russia, everything is also very interesting.

For example, in England and in the US, the standard and long-standing beverage component of beverages is juniper berries. They use it as folk medicine and drink it simply for the taste of it (if you are used to something since childhood, then why not drink it). And they add it to tea, of course. Not only to tea, actually — a much more famous juniper drink is gin. We have collected several links to juniper teas sellers — especially since juniper grows in Russia too, and now it is the time to pick juniper berries.

Fortnum and Mason, which is, in fact, a shop of expensive and, often, strange gastronomic souvenirs, offers its customers Gin and Tonic tea. In silk bags, natural juniper berries and other gin-and-tonic ingredients, 6.95 pounds for 15 bags. Less than half a pound per bag, a good offer: https://www.fortnumandmason.com/products/gin-tonic-tea-15-silky-tea-bags.

Winter Woods Tea Company (the USA) mixes juniper berries with sage and Lapsang Souchong — if this Lapsang Souchong is not very vigorous, then the mixture can be quite good: https://www.winterwoodsteacompany.com/collections/frontpage/products/smoke-juniper. Banff Tea Co also mixes juniper with sage and tea — only, this time, the tea is white and elderberry is add to the mixture: http://banffteaco.com/shop/juniper-sage/.

BlendBee company (also the US) has a green tea with jasmine flowers and whole juniper berries. Sounds strange, but the matter is that while nobody bothers to squeeze juniper berries, they are brewed very delicately, so they can fit into a classic jasmine green tea quite alright: https://blendbee.com/shop/popular-blends/green-tea -blends/jasmine-juniper/.

DAVIDsTEA (Canada and the USA) sells a mixture of sencha, rooibos and juniper berries — and here, perhaps, the word "perversion" is already appropriate: https://www.davidstea.com/ca_en/detox. And finally, Leaf and Bean Coffee Co's (again the US) mixture of juniper with sencha, raisins, coriander, honeysuckle, lime and sugar is a favorite, of course: http://leafandbeancoffeeco.com/tea/

Yes, you can try to repeat all of this at home. Juniper berries are a good material, and they are very pleasant to work with.

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