Olga Nikandrova. Denis Shumakov

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New 100 pieces of info to use in tea stories

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Tea micro-trends

Carbonated Matcha in Cans and Bottles

Market promotion of matcha tea is a classic story about how a rare and niche product turns into a mass trend in a short time. Initially, matcha is neatly hand-milled green tea, intended for the preparation in the framework of the classical Japanese tea ceremony. Its convincing medicinal properties opened the way for matcha to the mass market, which, however, was not particularly pleased with the not very convenient powder. And after a period of creative search and adding it to cookies, chocolates and other sweets, the mass market revealed RTD matcha tea. And some time later — sparkling matcha. For conservatives — in bottles (http://www.drinkmotto.com/). For cool, stylish and young — flavored and in cans. (http://www.matchaah.com/so-matchaah/)

It turned out rather nice.

Barrel-aged Tea

Well, actually, everything is logical here. The “aromatizing” effect of barrels has long been well known, barrels make various pleasant things to their contents directly, and after being used for their immediate purpose barrels can find a second life. And sometimes they are made immediately for the purpose of aromatization — in Andalusia, for example, there is an entire industry for making sherry barrels, which are then used for finishing the whisky. These barrels do not participate in sherry aging fullscale, and are often produced outside the Sherry region, for example, in Huelva.

Well, if the barrel can share the scent with whisky, then it is logical to assume that tea, if it is packed into a Madera barrel, for example, will also get some pleasant aroma. Here are a couple of examples of practical implementation of such logic.

Colleagues from Smith Teamaker offer a blend of green tea, white tea and various spices, flavored by aging in Chardonnay barrels, and black tea scented in Pinot Noir barrels (https://www.smithtea.com/collections/barrel- scented-tea). They give the details of the aromatization process. With pictures. Interesting, but it is not very clear how such a delicate aromatization will manifest itself in the light tea, already stuffed with all sorts of goodies.

And in general, aging in wine barrels seems to us too delicate. Whisky barrels are more convincing. Colleagues from Eteaket have approached the issue more thoroughly and offer black tea with bergamot and cornflower petals, aged in Tomatin whisky barrels. The combination seems very attractive: https://www.eteaket.co.uk/shop/tomatin-whisky-tea/. And Americans from J-TEA International age Taiwanese roasted oolong (http://www.jteainternational.com/tea/micro-batch-collection/bourbon-barrel-oolong) and pu-erh (http://www.jteainternational.com/tea/scented-tea/bourbon-puer-ii) in Taiwan's bourbon barrels. By the way, some time ago, Smith Teamaker also had tea aged in whisky barrels in their product range (https://www.thisiswhyimbroke.com/whiskey-barrel-aged-teas/).

But the real barrel tea virtuosi are people from Rare Tea Cellar (https://rareteacellar.com/collections/barrel-aged). They have a line of six such teas, they approach

the issue of barrel aging very responsibly, they put tea in a barrel two weeks after the completion of its alcoholic career, constantly stir up tea by rotating the barrel and continue the whole thing from 6 to 72 months. And they use sherry barrels, too, which is disarming.

As summary materials, you can read two articles. One from 2015 (http://imbibemagazine.com/barrel-aged-tea-a-new-frontier-for-teamakers/) — it tells about the experiments of Smith Teamaker and the experiences of another project — Tea of the People — which, apparently, ended not very well. And a more recent one (https://punchdrink.com/articles/is-barrel-aging-the-next-trend-in-coffee-tea/), which, among other things, tells about barrel-aged coffee.

Functional Japanese Agricultural Products

http://www.tandfonline.com/doi/abs/10.1080/09168451.2017.1422175

Since April 2015, Japan officially uses the Foods with Function Claims (FFC) labeling system, which marks food products with a curative effect on the human body, confirmed by independent research. As of May 2017, 1023 products with the FFC label were present on the Japanese market, all of which contained one of the eight basic products, including rice, soy, onions, apples, spinach, barley, mandarins Satsuma and green tea made from Benifuuki. Benifuuki is a tea cultivar, whose leaves contain methylated catechins. These methylated catechins remain in green tea produced from Benifuuki cultivar, get into the infusion, then — inside the body drinking it, where they help this very body to cope with seasonal allergies caused by pollen-producing trees, for example.

Independently evaluated functionality of food products seems to be a real trend, once there are appropriate regulatory mechanisms starting to appear. For tea, this approach is a good opportunity to cheer up in the market.

The Most Ridiculous Tea Machine

http://rith.co.uk/blog/guymartin

There's a small interactive studio in England called Running in the Halls Limited; it produces different amusing programs for different television channels. One of these programs (Guy Martin vs. The Robot Car) is devoted to artificial intelligence, including its domestic use. In one of the issues of this artificially-intellectual program the R2-Tea2 machine for brewing tea was presented. Which can prepare "customized" tea, based on the results of a series of clarifying questions given to the "master" using SMS messages, combining a simple set of parameters (a tea type, infusion time, the addition of sugar or milk, etc.). Roughly speaking, on a request to prepare an invigorating tea, R2-Tea2 will take some broken leaf black tea and infuse it for a longer time, and on request to prepare something relaxing, the machine will present chamomile tea, for example.

In offices, such an aggregate could perfectly take root, with proper debugging, of course.

Choosing Tea Through Your Wine Preferences

http://www.winemag.com/2017/12/27/favorite-wine-perfect-tea/

Wine Enthusiast published an article with a small selection of recommendations for choosing tea on the principle “Tell me what wine you like — and we will advise you tea”. There are only five recommendations in the collection — but they are more or less logical and focus only on pure teas. Which is nice.

Barossa Shiraz — Assam black tea. Alsace Pinot Gris — Bai Mu Dan. Etna Bianco — Longjing green tea. Finger Lakes Riesling — high-mountain Taiwanese Tieguanyin, slightly fermented, apparently. Right-bank Bordeaux — Shu Pu-erh.

Perhaps, it would be also interesting to try the reverse (wine-through-tea) approach.

Fabienne Effertz, Cheese and Tea
https://www.swissinfo.ch/eng/exotic-pairing_swiss-cheese-and-asian-tea--an-arranged-culinary-marriage/43729940

Under the link you’ll find an article on how to pair Swiss cheese with tea. With expert opinions, several recipes (Gruyère and Cave-aged Emmentaler, for example, are excellent with different Darjeeling teas) and an intriguing story about how the Swiss tradition of taking tea with fondue led to the mastering of the tea-and-cheese theme.

The name of the master, engaged in tea-and-cheese combinations, is Fabienne Effertz. She lives and works in Belgium, is a co-author of the book “Le Herve, un fromage, un pays” (https://www.amazon.fr/Herve-fromage-pays-Jean-Pierre-Gabriel/dp/9081658239/), which is dedicated to cheese, of course, and the author of a whole book about cheese and tea pairing. This tea-and-cheese book is called “Fromage & Thé” (https://www.amazon.fr/Fromage-Thé-Fabienne-Effertz/dp/2930921013/) and, it seems, is already sold out on Amazon. In addition, Fabien Effertz leads the project “Fromage & Thé” (https://www.facebook.com/FromageTh%C3%A9-703722796389045/, https://www.fabienneeffertz.com/).

We worked with tea and cheese theme (http://www.teaexpress.ru/abouttea/gastronomictea/teaandcheese). And we are sure that cheese is one of the first candidates to be paired with tea. Notably, the combination of tea and cheese is more important for cheese than for tea. In the standard pair “wine + cheese”, cheese, in the vast majority of cases, plays second fiddle, and wine almost always pulls the focus of attention. But in the pair “tea + cheese”, cheese comes to the fore. It is objectively a gastronomically stronger product than tea, and it is in combination with tea that it receives its well deserved attention to the full.

Tea, by the way, does not suffer from this at all — it is an ideal supporting-role drink.

Study of tea

Socio-Economic Portrait of The Tea Assam

https://ac.els-cdn.com/S1462901117312406/1-s2.0-S1462901117312406-main.pdf?_tid=5677f5f8-4e70-415c-8cf6-0367121b3b21&acdnat=1521630755_a825c8cae5011ebff0b5abbf099a9d0a

Under the link, you'll find a report on a sociological survey conducted in four main tea sub-regions of Assam (Cachar, North Bank, South Bank and Upper Assam) by an international group of scientists. The study is not so much about tea, but the portrait of the main tea state of India turned out to be very impressive. Here are just a few touches.

The most common type of the tea plant in Assam is, of course, *C. sinensis var. assamica*. But the second most common camellia is not pure C. *sinensis* (although, of course, it is also grown), but *C. sinensis var. lasiocalyx*, which in Assam is called Cambodian (Cambod) tea variety. Traditionally *lasiocalyx* is considered a subspecies of the Assamese tea variety, but recent genetic studies give it a non-illusory chance to become a full-fledged variety.

Organic production is not widespread in Assam, at best 4% of farms (in North Bank) produce organic tea. In addition, few farms have Fairtrade certificates, several dozen farms are ISO certified. Assamese tea subregions are more or less oriented to exporting tea to specific countries. For example, tea is brought to Russia from all subregions, except for Upper Assam. Other agricultural activities are also different in different subregions. In Cachar, for example, fish is caught, and in Upper Assam, orchids and spices are grown.

Understanding Kombucha Tea

http://onlinelibrary.wiley.com/doi/10.1111/1750-3841.14068/full

French scientists have prepared a review of studies on the symbiosis of microorganisms which produces the kombucha drink and the fermentation processes that accompany this symbiosis. From their compelling and interesting report, among other things, one can learn the following.

The symbiotic consortium of Kombucha (sounds like poetry) is able in 7-10 days to turn sugar and tea into a slightly fizzy, slightly sour and refreshing drink that contains organic acids (acetic, gluconic, glucuronic, lactic), amino acids, vitamins (B1, B2, B6, B12, C), hydrolytic enzymes, minerals (copper, iron, manganese, nickel, zinc) and all other components (ethanol, proteins, tea polyphenols), with their composition dynamically changing depending on the fermentation time. The exact composition of the symbiosis that makes Kombucha can vary from population to population, but the main groups of microorganisms of the consortium are quite stable.

First, yeast. Some of them (for example, *Schizosaccharomyces pombe, Brettanomyces bruxellensis, Saccharomyces cerevisiae, Zygosaccharomyces bailii* and others) provide for complex and diverse fermentation processes, while others (for example, *Candida krusei*) participate in the formation of the signature Kombucha biofilm.

Secondly, bacteria. Basically — acetic acid, but a little lactic acid bacteria are also present there. In fact, the symbiotic consortium includes aerobic and anaerobic microorganisms that provide alcoholic, lactic and acetic fermentation. Bacteria also take part in the formation of the biofilm — some of them produce cellulose from various sources of carbon, including glucose, ethanol, sucrose and glycerin.

Due to the diversity of the microorganisms, it is rather problematic to describe their interaction precisely. But broadly speaking, at the beginning of the fermentation the yeast hydrolyses sucrose into glucose and fructose, then ethanol is formed and finally the bacteria develop the nutrient medium from the yeast metabolites and their remains and convert the ethanol into acetic acid.

The fermentation of Kombucha is affected by many factors — acidity and temperature of the environment, access to oxygen, saturation of the infusion with carbon dioxide, etc. But the most interesting factors are the base on which the fermentation takes place, and the fermentation time.

The traditional basis for Kombucha is sweetened black or green tea, but there are works that describe the properties of kombucha grown on other substances. For example, Kombucha grown on Echinacea and winter savory needs less time for fermentation, Kombucha on coconut water has shown an enhancement of some interesting biological activities (no details are given), Kombucha on grape juice also ferments quicker and turns out delicious. Kombucha on rooibos tea demonstrates a good antioxidant potential, and Kombucha on oak infusion has anti-inflammatory properties.

With regard to the duration of fermentation, it usually fluctuates between 7 and 60 days. 6-10 days after the beginning of fermentation, Kombucha is already a pleasant refreshing drink, then vinegar begins to influence its taste more and more. Kombucha reaches its optimum parameters on the fifteenth day. With increasing fermentation time, the antioxidant properties of Kombucha slightly increase, but at the same time the content of organic acids also increases, which is not very good. In addition, at different stages of development kombucha differently manifests antimicrobial properties, more or less effectively suppressing different groups of bacteria.

The review ends with a warning that Kombucha is a biological object and can be contaminated by pathogenic microorganisms and an optimistic wish for further research.

Tea, Coffee, Soda and Fertility

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3321066/

Studies that examine possible associations between the use of various drinks and the probability of conception have been conducted for a long time and take into account (or do not take into account) so many factors and are conducted in so many different ways that some of them allow us to draw absolutely opposite conclusions. A group of specialists from Boston University, apparently, wasn't satisfied with this situation — and in 2012 they approached the issue thorough and on a larger scale. During three years, specialists observed 3,600 Danish women who were planning a pregnancy. And found that women are 27% more likely to become pregnant if they regularly drink tea. In comparison with those, of course, who does not drink tea. And the type of tea had no influence on the final result — it could be even herbal tea.

At the same time, soda consumption reduces the likelihood of conception, by about 20% (with soda taken twice a day) — but the researchers themselves consider these data inaccurate due to a large diversity of soda drinks.

Well, the data on coffee turned out to be very uneven. On average, coffee had no effect on the probability of conception at all. But in some groups of respondents, small dependencies were evident. For example, for women over 30, consumption of coffee slightly reduced the likelihood of conception, especially if more than three cups per day were consumed. On the contrary, the same three cups of coffee a day increased the likelihood of conception in women under 30 and in women who had never given birth. In addition, coffee slightly increased the likelihood of conception in women who smoked. In short, this is the case when the phrase "it's all so complicated" is more than appropriate.

Well, as is always the case in such studies, scientists identified very interesting side patterns. For example, women who preferred coffee, as a rule, were older, had a higher number of births before participating in the study, smoked and drank alcohol more often than women who did not drink coffee. Women who preferred tea were older than those who preferred sodas, but younger than coffee-drinkers, drank more alcohol and smoked less often than women who did not drink tea. And women who preferred soda had a higher body mass index, and were less physically active than other women, they were younger and less educated.

The relationship between the intensity of sexual life and consumed beverages was not revealed, except for one case — women who drink three or more carbonated drinks a day were less likely to have frequent intercourse, but more likely to time intercourse. Now we all have something to talk about in the mysterious atmosphere of tea clubs, to a quiet meditative music in half-light.

Green Tea and Cocoa Enhances Memory Formation in The Pond Snails
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5824930/

Canadian scientists studied the effect of epicatechins and products containing epicatechins (green tea and cocoa) on the memory of *Lymnaea* (the pond snails) and came to the following conclusions. First, the use of pure epicatechins as well as products containing epicatechins has a positive effect on the snail memory. Secondly, tea and / or cocoa consumption stimulates the long-term memory of snails. Thirdly, tea and / or cocoa consumption reduces the loss of memory under stress.

It turns out that snails lose their memory under stress. Therefore, they cannot remember what scares them. But they'll most probably remember Canadian scientists.

Polyphenolic Composition in Leaves of Camellia Irrawadiensis
https://www.jstage.jst.go.jp/article/cpb/57/11/57_11_1284/_pdf/-char/en

Japanese scientists conducted a comparative analysis of three camellias — *C. sinensis*, *C. irrawadiensis* and *C.taliensis* — to determine or clarify the differences between their polyphenolic and other chemical composition. Camellia sinensis is the plant from which tea is usually produced. And

C.irrawadiensis with *C.taliensis* are its very close relatives. Currently *C.irrawadiensis* is considered a Burmese endemic, but it is also grown in other countries, especially in different scientific institutions. Its leaves are suitable for making tea, and the plant itself is often used as a source of genetic material in breeding new varieties of the tea plant. Its characteristic difference from *C. sinensis* is noticeably larger beautiful regular-shaped white flowers with bright yellow stamens.

It turned out that *C.irrawadiensis* contains fewer catechins than *C.sinensis* and *C.taliensis*, but it surpasses its close relatives in the content of theobromines (an alkaloid that is close in action to caffeine and, essentially, good for health). In addition, *C.irrawadiensis* contains strictinin, known for its anti-allergic, laxative, antibacterial and hair-growth-promoting action. The main polyphenol in *C.irrawadiensis* is one of the ellagitannins, which, apparently, does not yet have its name, and its structure looks somewhat frightening (1,2-di-O-galloyl-4,6-O-(S)-hexahydroxydiphenoyl-b-Dglucose). Ellagitannins are good — they are contained, for example, in raspberries and have a high antioxidant effect. In *C.sinensis*, by the way, there are no ellagitannins, and in *C.taliensis* there are very few of them.

So, if you drink tea from *C.irrawadiensis* with raspberry jam, then nothing will be oxidized in the body at all.

Breeding History of The Tea Plant

https://www.frontiersin.org/articles/10.3389/fpls.2017.02270/full

A team of specialists from China, India, Sri Lanka, Kenya and the United Kingdom conducted a genetic analysis of the main varieties of the tea plant (*Camellia sinensis*) in order to clarify the history of their expansion and cultivation. They studied *Camellia sinensis var. sinensis*, two branches of *C. sinensis var. assamica* — Indian and Chinese — and other camellias, whose leaves are used for making tea. The researchers found that the two main varieties — *C. sinensis* and *C. sinensis var. assamica* — diverged about 22 thousand years ago, during the last glacial maximum. And the division of the Assamese variety into Chinese (localized in the south of China) and Indian (localized in the north of India) occurred approximately 2,770 years ago.

The fact that the first divergence coincides in time with a sharp change in climate, and the second with the beginning of tea cultivation, allows us to formulate an impeccable version from the point of view of the tea storytelling. Most likely, the tea tree was divided into Chinese and Assamese varieties due to the climatic division of the historical range of its growth. And the divergence of the Chinese branch from the Assamian variety was largely man-made and was associated with the beginning of active selection and hybridization of tea in the process of its conscious breeding.

Emotional Response To Tea and Coffee of Different Temperatures

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5769193/

A group of scientists from the United States, Norway and the United Kingdom offered a group of 157 participants to try green tea (78 people) and coffee (79 people) at different temperatures (5, 25 and 65

degrees Celsius) and describe their perception of the drinks. Both tea and coffee for the experiment were of high quality — the tea, for example, was Korean and green.

All the characteristics that the participants gave to the drinks were divided into two categories — emotional (description of impressions) and sensory (description of sensations — taste, aroma, color, etc.). To describe the coffee participants used 16 emotional and 6 sensory terms, to describe the tea — 19 emotional and 18 sensory.

In the case of coffee, most of the emotional terms either were used in relation to the drink at 65°C or did not depend on temperature at all. Sensory terms, in general, were used in relation to the beverages at a temperature of 25 and 5°C. A little strange result, to be honest.

In the case of tea, the balance of emotional and sensory terms for each of the temperatures turned out to be almost ideal, but the temperature distribution of specific terms was very interesting. For example, the cold infusion was described as green, spicy and salty, the infusion of 25°C — as yellow and bitter, and the infusion of 65°C — as brown and floral. At the same time, regardless of temperature, this same tea (green Korean) was described as sweet, herbaceous and nutty.

It is not very clear what can be done with this amazing knowledge. But it is absolutely clear that, with such a relatively complex perception of each specific tea, there is no chance for tea to compare with the popularity of coffee. Three times the amount of sensory parameters used to describe tea means not only a flattering wealth of consumer characteristics for tea, but also that all these characteristics are more blurred. That is, they are worse remembered and worse recognized. For a commodity, this is not very good, of course. Our last resort is a wide variety of different teas. And the fact that the flavoring materials are good now.

Microbiology of Commercial Tea Samples

https://bmcmicrobiol.biomedcentral.com/articles/10.1186/s12866-017-1142-z

Italian experts studied the microbiology of 32 samples of tea, sold in Italian stores. The tea selected for the research was mostly black and green, in all possible variants: pure and flavored, decaffeinated and classic. The inner world of all these teas turned out to be rich — bacteria, mold and a bit of yeast were found in the teas. Among the found microorganisms were pathogenic ones — in fact, they were the goal of the research. Pseudomonas, Escherichia coli, clostridium and all that — but none of the microorganisms was found in quantities that are anyhow dangerous for humans. Especially with the fact that tea, as a rule, is brewed with boiling water.

The situation with mycotoxins — substances that are a product of the life activity of microorganisms — turned out to be a little worse. Ochratoxin A, for example, was found in 22 samples out of 32, and in quantities exceeding the maximum allowable. And even under such conditions, it was recognized not to be dangerous.

In short, the Italians offer us not to worry, but to be careful about the storage conditions of tea.

L-theanine to All Chickens, but Let Moderation Be Your Guide

http://www.mdpi.com/1422-0067/19/2/462

Pakistani, Chinese and Egyptian scientists took 400 broilers and divided them into four groups. One of these groups was the control one, and the three others were given l-theanine (an amino acid, mainly contained in tea leaves) as a feed additive at the rate of 100, 200 and 300 milligrams per kilogram of feed.

Virtually all the significant characteristics of chickens that received l-theanine proved to be better than the ones in the control group. They were better at gaining weight, they had higher feed conversion ratio, they had higher meat yields and the meat itself was better, and so on. And the best indicators were in the group that received 200 milligrams of l-theanine per kilogram of feed. The increase in the dose of l-theanine was not particularly effective, in addition, the researchers decided that it is potentially dangerous for the health of chickens.

In fact, this is not the first piece of news which informs that some tea components, when added to feed, are good for broilers. And among all the bonuses received by chickens, the first places are always fast weight gain and high feed conversion. At the same time, we all know that there are components in tea that prevent obesity — that is, the weight gain will be only lean meat.

In short, you don't need to go to gym — just drink more tea. Only joking.

Pomelo Peel as a Carrier of Tea Catechins

http://onlinelibrary.wiley.com/doi/10.1002/jsfa.8931/abstract

Chinese scientists have studied the ability of pomelo peel for adsorbing epigallocatechin-3-gallate (EGCG) — the main tea catechin, which has high antioxidant properties. Having judged reasonably that pomelo (*Citrus grandis*) has lots of peel and it would be very good if it turned a profit, the researchers studied this peel with the help of Fourier transform infrared spectroscopy, scanning electron microscopy and high-performance liquid chromatography. Adsorption of EGCG onto pomelo peel from aqueous solution was studied at different catechin concentrations and at different solution temperatures.

Pomelo peel consists of dietary fiber, which, in the case of the EGCG solution, demonstrated excellent adsorptive properties. The adsorption was defined as physical, spontaneous and endothermic. In fact, the results indicate that pomelo peel can be used to prepare pills with epigallocatechin-3-gallate, or, if you want something more attractive than pills, any functional products. Candied fruits from pomelo with catechins. It would be a bomb. Youth, beauty, health and wealth are becoming inevitable again.

Do You Drink Tea? You Might Be Lying!

http://apjcn.nhri.org.tw/server/APJCN/27/2/460.pdf

Japanese and Australian experts suspected that, in studies related to the effect of tea and coffee intake on health, there is a significant flaw associated with inaccurate data on the amounts and

nature of this intake. The scientists decided to check the accuracy of the most common ways of collecting diet information and the possibility of using them to assess how much various active ingredients people get from tea and coffee.

To test sound suspicions, scientists selected 57 healthy Japanese women and subjected them to the following sophisticated experiment. First, they asked the women how much tea and coffee they drink. For this, two types of questionnaires were used. Food frequency questionnaire (FFQ) which is, in fact, a list of products with frequency of their use (once a day, once a few days, etc.), from which it is necessary to choose the most suitable one. And a three-day Food record (FR) — a food diary, which lists all the foods and beverages consumed during the day. Simultaneously with the interviews, the participants of the experiment took tests and checked blood plasma and urine for the presence of biomarkers of four basic catechins, chlorogenic acid and caffeic acid.

It turned out that in the case of green tea, and in the case of coffee, the data obtained with the help of FR were quite well associated with the results of the blood and urine tests, while the data obtained with FFQ were poorly associated with the results of the analyses. Based on the results of the study, the scientists made two conclusions. Firstly — urine analysis is suitable for the evaluation of polyphenolic markers better than blood plasma analysis. Secondly — filling out their FFQ, women tend to exaggerate the frequency of drinking green tea. Mainly due to the fact that the notion of "green tea" is not very clearly defined and is often confused with other drinks, for example barley tea or herbal tea. The rate of such confusion in the FFQ reaches 50%.

Which is a lot, in fact. Just imagine the situation — you are preparing a large-scale study with tens of thousands of respondents to find out how green tea consumption affects this or that. The way to collect data on the diet of these respondents is but one — questionnaires. So, you conduct a study, get some results — and then it turns out that the respondents do not distinguish between green tea and herbal tea.

The life of the scientist is rough.

Tea Polyphenols Improves Egg Production Performance of Older Hy-Line Brown Hens

https://academic.oup.com/jas/advance-article/doi/10.1093/jas/skx007/4824872

Chinese scientists were adding tea catechins or other polyphenols to the feed of Hy-Line Brown hens in the late laying period in order to assess whether it is possible to prolong their period of high egg production and find all sorts of other interesting things.

It turned out that both the catechin and polyphenol diets are good for both hens and eggs. But the polyphenolic one is better. It increases the feed conversion ratio in hens, they carry significantly more eggs with better albumin quality, ovomucin composition, magnum morphology and the Haugh unit.

Note: To calculate the Haugh unit they weigh an egg, break it onto a flat surface, determine the height of the thick egg white that immediately surrounds the yolk, and then use a special formula

taking this height and the egg's weight into account. The higher the number, the better the egg. But to shine at a party, one must know the formula by heart, of course.

Green Tea and Exertion in Rats

https://link.springer.com/article/10.1007%2Fs10517-017-3913-9

In Russia, in St. Petersburg, a group of scientists studies the effect of green tea on the body under conditions of exhausting exercise in rat models. In particular, they found that green tea extract increases endurance due to involvement of slow-twitch muscles, whose adaptation is associated with an increase in the expression of genes responsible for the regulation of Ca2+ balance (https://link.springer.com/article/10.1007%2Fs10517-017-3913-9). They also found that green tea extract, consumed twice a day (6 mg per kilogram of weight before and after physical exertion) for two weeks, increases swimming duration, while being administered in a single dose before the exercise (12 mg per kilogram of weight) also for two weeks, does not lead to an increase in running time (https://elibrary.ru/item.asp?id=21959186).

Tea Accumulates Heavy Metals, But We Have Nothing To Fear

http://www.mdpi.com/1660-4601/15/1/133/htm

Chinese experts from Guizhou University have tested the ability of tea bushes to accumulate heavy metals (without touching the uncertainty of the term) in the leaves. And that's what they have found.

Copper and zinc are better accumulated in young tea leaves, and aluminum, manganese, lead, cadmium, arsenic, chromium and mercury — in mature tea leaves. The average bioconcentration factors were as follows (in descending order): manganese, cadmium, zinc, mercury, nickel, copper, arsenic, lead, chromium, aluminum. Roughly speaking, this means that tea plants accumulate manganese best of all, and aluminum — the worst. This, by the way, does not mean that in absolute values there will always be more manganese in tea leaves than aluminum — everything depends on the concentration of these substances in the already mentioned environment. In addition, the intensity of accumulation of heavy metals also depends on their concentration in the environment (for manganese, copper and aluminum, the correlation is positive, for lead — negative) as well as on the acidity of the soil. Finally, the specialists considered the risks of harming health through ingestion of heavy metals when drinking tea minimal, they asked only not to overdo with manganese.

Special Tea Bacillus

http://ijs.microbiologyresearch.org/content/journal/ijsem/10.1099/ijsem.0.002542

Chinese experts have discovered a new kind of bacteria in pu-erh tea. They are aerobic, gram-negative, sporogenous and rod-shaped — well, that is, they are bacilli. The new bacillus is closely related to several other species (*Bacillus shackletonii, Bacillus acidicola, Bacillus paralicheniformis, Bacillus ginsengihumi*), but differs from them enough to separate it as a special strain. Specialists propose to call it *Bacillus camelliae* and, of course, to think about it during every pu-erh tea drinking.

Tea Consumption Enhances the Creativity of Chinese Students
https://www.sciencedirect.com/science/article/pii/S0950329317303051

Chinese scientists conducted an interesting experiment on students, the essence of it was as follows. Students (50 in total), one at a time, were invited to a room where they were asked formal questions (age, education, etc.) and given tea or water (150 ml, 42° C, Lipton tea, unknown water), this stage took three minutes. After that, the students went to another room, where a person who didn't know what each student was drinking, set before them the task of the following content. It was necessary to compose an attractive block design, a photograph of which could be used to advertise new blocks of a toy factory. Students were informed that the better their design, the more they will be paid (in the end everyone was paid the same amount). The designs were photographed, photos were given for evaluation to a group of other students — and the designs built by the students who drank tea were rated on average as more creative.

Scientists, as it happens, were interested not only in the result, but also in the mechanism that ensures this result. A working hypothesis based on past researches was this. First, there is evidence that tea enhances mood. Secondly, it is known that people in a good mood are more creative. To test this chain, one more experiment was conducted.

It all started the same way — a formal interview, tea or water, a three-minute conversation about different things — but after the conversation one had to fill in a form describing their mood (mark how they felt on the Affect Grid), and then in 20 minutes to come up with as many names for a new noodle restaurant as possible. For the best names they, again, were promised more money. After twenty minutes of inventing the students were asked to rate the degree of their mental and body involvement during the naming task. All restaurant names, as well as designs, were evaluated by other students. There was no much difference between the tea and water group in the number of invented names, but the tea group received significantly higher scores in creativity. And they won due to the fact that they stayed creative for a longer period — at the start of the creative 20 minutes, the frequency of successful names was about the same, but closer to the finish the water group became bored, while the tea group continued to come up with more decent names. There was no association found between the mood estimates and the results of the creative activity.

So, no more "I'm not in the mood today". Tea has a direct impact on your brain!

Bacterial Communities of Taiwanese Oolong Teas and Their Association with Anti-microbial Peptides
https://bmcsystbiol.biomedcentral.com/articles/10.1186/s12918-017-0503-4

Taiwanese scientists have studied bacterial communities that live in four famous Taiwanese oolong teas — Dayuling tea, Alishan tea, Jinxuan tea, and Oriental Beauty tea. The purpose of this research was not only to count all the bacteria, but also to determine how the antimicrobial peptides contained in the teas are related to the structure of their bacterial communities. It turned out that the most diverse bacterial community is present in Oriental Beauty tea. The most common families of bacteria in the four teas were *Bacteroidaceae* (21.7%), *Veillonellaceae* (22%) and *Fusobacteriaceae* (12.3%), and

the dominant species (in all four teas) — *Escherichia coli*, *Bacillus subtilis* and *Chryseobacterium sp*. Well and most importantly — the structure and amount of antibacterial peptides in teas is well correlated with the structure of bacterial communities in these teas. And this, very roughly, means that the more microbes live on a particular tea, the more effect we can expect from this tea in the fight with these same bacteria.

Epigallocatechin-3-gallate as an Inactivating Agent

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5732980/

Chinese scientists have studied the effectiveness of epigallocatechin-3-gallate (EGCG) when used as an inactivating agent for influenza vaccines and Dengue virus. The efficacy of EGCG has been compared with formalin, which is often used for the preparation of inactivated vaccines, but has a number of disadvantages, for example, it reacts with some amino acids — and vaccines do not need this. EGCG lacks formalin deficiencies, and vaccines based on it have proven more effective. After EGCG-inactivated influenza virus (in a mouse model), antibodies are produced more intensively and have greater cross reactivity (i.e., "work" for a greater number of virus subtypes). Not a single mouse has died of influenza after this vaccination — which is also good, of course.

How to Make Green Tea out of Pink Tea. Solution

https://link.springer.com/content/pdf/10.1007%2Fs00216-017-0691-1.pdf

Some time ago, Springer publishing house announced a small tea contest with the following content. To prepare a certain drink, green tea or a blend based on Darjeeling with the addition of various spices is used. It is brewed, then soda, salt and milk are added to it. This drink is traditional in Kashmir and turns pink. The first task was to explain what are the chemical reasons for the pink color and why this phenomenon is observed only with certain types of tea leaves (e.g. green, but not white)? And the second task was to pick up such a substitute for green tea (including herbal ones) so that the drink after the same procedure (boiling, adding salt, soda, milk) became green. Here is the source: http://paperity.org/p/80009380/pink-tea-challenge.

The answer to the questions of the challenge were to be given before September 1, 2017, so, at the moment, everything is in the past — the winners are determined, the prizes are received — and the publisher published the solution.

Kashmir tea turns pink due to the interaction of polyphenols with soda. And to prepare tea, which would turn green after boiling, adding salt, soda and milk, one needs to use something red and anthocyanic — for example, hibiscus.

Genes of Chinese Tea Cold-tolerance

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0188514

Chinese scientists took two tea cultivars — frost-resistant (Camellia sinensis) and with low cold-tolerancce (*Camellia sinensis var. assamica*) — and first subjected them to cold acclimation (for one and two weeks), and then warm de-acclimation. Then they looked at how differently cold-resistant and

not cold-resistant cultivars reacted at such tricks. It turned out that in response to a drop in temperature the cold-resistant cultivar increased the expression of the genes CsCBF1 and CsDHNs and began the accumulation of sucrose.

New Catechins Are Stronger, but Few

http://www.sciencedirect.com/science/article/pii/S0963996917306701

Japanese scientists have examined the leaves of Yabukita tea cultivar (which is used to produce most of Japanese tea) and discovered new components of the (−)-epigallocatechin (EGC) moiety there: epigallocatechin-3-O-caffeoate (4.3–75.1 μg/g in the dry tea leaves) and epigallocatechin-3-O-p-coumaroate (f16.8–345.8 μg/g in the dry tea leaves). Both new catechins were tested for antioxidant properties and surpassed epigallocatechin gallate in that. The only problem is that they are present in lower quantities than the major catechins. Therefore, we can experience only pure joy from the fact of their presence in tea, without seeking to profit,.. and learn new words, of course.

The Finer The Tea Particles, The Higher Their Antioxidant Activity

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5694873/

Nigerian scientists have studied the association between the antioxidant properties of tea, ginger and tea-ginger mixture (2:1) with the size of the particles of these products (0.425, 0.710 and 1.180 mm) and the liquid used for the extraction (water, ethanol and aqueous ethanol).

With the aqueous extracts, everything was straight. Tea has a higher antioxidant activity than ginger and tea-and-ginger mixture. And the smaller were the tea particles (this was also true for ginger and tea-ginger mixture), the more antioxidants were extracted and the higher was the antioxidant activity of the extract. The difference was not very big — about one percent between tea particle size of 0.425mm and 0.710mm — but the scientists noticed it nevertheless.

With ethanol, everything turned out somewhat more complicated. Ethanolic and aqueous ethanolic extracts of tea, ginger and tea-ginger mixture of different particle sizes demonstrated more selective antioxidant properties. For example, some radicals were better scavenged by extracts of smaller size particles, and others — by extracts of larger particles.

Ethanol is a tricky liquid.

Different Types of Tea and Lithium Bioaccessibility

http://www.sciencedirect.com/science/article/pii/S0308814617316850

Turkish scientists have studied the bioaccessibility of lithium from different types of tea and came to the following conclusions. The highest bioaccessibility has lithium contained in green tea, the lowest — in black tea. The time of tea brewing didn't affect the bioaccessibility of lithium, but additives to tea can alter the lithium picture very much and in different directions. Calcium, milk and tannic acid reduce the bioaccessibility of tea lithium, while lemon juice (as well as citric acid) and sugar —

increase. That said, there's very little lithium in tea — even from green tea you can get only three to four hundredths of a percent of the recommended dietary allowances of lithium.

And still we need lithium, we do! Lithium makes us calmer and less likely to go mad.

Obtaining Epitheaflagallin-3-O-gallate from Green Tea

https://www.ncbi.nlm.nih.gov/pubmed/29131612

Epitheaflagallin-3-O-gallate is not only a smart word, which, along with such terms as epigallocatechin-3-O-methyl-gallate and oolonghomobisflavan, should be known to any self-respecting tea lover. This is also a minor polyphenol, which is contained in the extract of black tea and is synthesized from epigallocatechin and epigallocatechin gallate. This compound has a rich health potential, but it is scarce in black tea. Therefore, Japanese scientists decided to try to obtain epitheaflagallin-3-O-gallate from green tea, which is known to have a lot of epigallocatechin and epigallocatechin gallate, and which can be treated with laccase (this is an oxidase) in the presence of gallic acid. The obtained epitheaflagallin-3-O-gallate was put through a series of experiments, which confirmed that even synthesized in somewhat unnatural way, this thing has antioxidant properties, potential anti-obesity and anti-periodontal disease activities, and inhibits pancreatic lipase.

A powerful substance! Well, and a good thing to remember is that laccase is an oxidase.

Tea and health

Sweet Tea Does Not Change The "Sugar Balance" of The Young Taiwanese

https://www.jstage.jst.go.jp/article/jmi/65/1.2/65_43/_article

Taiwanese experts for two weeks were observing a group of young Taiwanese who at first, during the week, drank a popular on the island beverage based on tea, milk and tapioca (this is Bubble Tea, of course) without any restrictions. And then, during the next week, did not drink Bubble Tea at all. There were no other restrictions on the products and beverages for the participants of the experiment.

After observing the young people, scientists drew two conclusions. First, beverages are the main source of sugar for the young Taiwanese. Secondly, if you exclude one sweet drink (Bubble Tea in this case) from the diet of the young Taiwanese, they will immediately replace it with another — and the total amount of sugar consumed will not change substantially.

Sad.

Pu-erh, Consumed Before Alcohol, Protects from Gastric Mucosal Damage

https://www.spandidos-publications.com/10.3892/br.2018.1068

Chinese scientists have evaluated the potential gastroprotective function of Pu-erh tea extracts against ethanol-induced gastric mucosal damage. For this purpose, they divided lab rats into six subgroups. One was left alone as a control group, and the five others were given, respectively, water, cimetidine (this is a medicine that is used for various stomach diseases), green tea and pu-erh tea in three different dosages. After that, absolute ethanol was orally administered the same five subgroups of rats.

After studying the state of health of the intoxicated rats, it turned out that pretreatment with cimetidine and pu-erh tea in medium and high dosages (1 and 1.5 grams per kilogram of weight) protects the gastric mucus layer from damages caused by alcohol quite well.

Note also that pu-erh in this study was not brewed in the usual way — scientists used a ready-made extract of pu-erh tea, which was diluted to the desired concentration. The characteristics of the extract are not reported, so it's difficult to turn the result obtained by the Chinese experts into an exact recipe for protecting the stomach before drinking.

Ethyl Acetate Extract of Zhangping Narcissus and Breast Cancer

http://www.jzus.zju.edu.cn/article.php?doi=10.1631/jzus.B1700162

Chinese scientists have tested how effectively extracts of pressed oolong Zhangping Narcissus (or Zhang Ping Shui Xian) suppress the development of breast cancer.

On testing three extracts (ethyl acetate, n-butanol and water extracts of the tea) in vitro, it was found that the ethyl acetate fraction is the richest in phenolics, flavonoids, procyanidins and catechins, including epigallocatechin-3-gallate. The same fraction, naturally, showed the best antioxidant abilities and inhibited breast cancer cells better than the others.

As is usual in such cases, we'd like to draw attention to the fact that there is a big difference between the test of the ethyl acetate extract of tea and the action of conventional tea on a real person. Which deters all decent people from crying about the guaranteed anti-cancer effectiveness of tea.

Non-Alcoholic Beverages and Depression

https://www.nature.com/articles/s41430-018-0121-2

Korean scientists conducted a meta-analysis of researches linking the consumption of non-alcoholic beverages and the risk of depression. The studies included in the analysis, described more than 20,000 cases of depression, and observed almost 350,000 people in total.

So. According to the results of the meta-analysis, drinking coffee reduces the risk of depression by 27%, and drinking tea — by 29%, with gender and way of life making no difference at all. While the consumption of soft drinks, on the contrary, increases the risk of depression by 36%.

No convincing explanation for such an interesting result comes to mind.

Green Tea Improves The Memory of Older Women

https://www.ncbi.nlm.nih.gov/pubmed/29484360

American researchers conducted a small study in which women aged 21 to 29 and aged 50 to 63 years received either green tea without caffeine or a placebo, and then passed all sorts of tests and analyses.

In the course of the experiment, it was found that acute consumption of green tea did not significantly affect the memory of young women, but the memory of older women after drinking green tea (without caffeine) improved.

It's important to remember.

Alcohol, Tobacco And Hot Tea Increase The Risk of Esophageal Cancer

http://annals.org/aim/article-abstract/2671921/effect-hot-tea-consumption-its-interactions-alcohol-tobacco-use-risk

American, British and Chinese scientists were studying the diet and health of over 450,000 Chinese adults for over nine years and found that drinking hot tea combined with drinking alcohol (more than 15 ml of pure ethanol per day) or smoking (daily) increases the risk of esophageal cancer. At the same time, the scientists didn't find the association between the consumption of hot tea without tobacco or alcohol (or if alcohol and tobacco are consumed less often and in smaller quantities than indicated

above). It is curious that the first assumptions about the connection between hot tea, tobacco and alcohol and esophageal cancer were made back in 1930 when examining Russian-born patients in China who grew up on samovar (meaning, very hot) tea.

Dietary Potential of Aged Oolong Tea

http://www.mdpi.com/2072-6643/10/2/187/htm

Chinese scientists evaluated the possibility of using aged Oolong tea to prevent obesity, provoked by a high-fat diet. During six weeks, several small groups of mice were given oolong teas aged from 2016, 2006 and 1996 and were examined in every possible way, with the records of their body weight, fat accumulation, and serum biochemical parameters.

After six weeks, it was found that the mice that drank aged oolong tea were less fattened, they had lower serum levels of triglyceride, total cholesterol, and low-density lipoprotein cholesterol level. At the same time, their serum high-density lipoprotein cholesterol level was higher. Also, the mice that were given aged oolongs developed less liver fat and had lower size of adipocytes in the epididymal fat, especially in the 2006 group.

And in general, it turned out that aged oolongs promote oxidation of fatty acids and prevent their synthesis, that is, they work no worse than fresh oolongs.

Tea and Coffee, Men and Women, the Netherlands and Death

https://link.springer.com/article/10.1007%2Fs10654-018-0359-y

Dutch scientists examined the results of the study, which was conducted in the country between 1986 and 1996, covered more than 120,000 Dutch people aged 55 to 69 years and focused on diet and lifestyle of the subjects. The scientists fished out data on tea and coffee consumption from this study and correlated the information with the deaths of the subjects. Given that the Netherlands is mainly a coffee-drinking country, attention was also paid to situations in which people changed their drinking habits and substituted coffee with tea.

In simple situations, when people drank just tea or coffee, everything was fine and beautiful. Women who drink coffee, during the study, died less often. Men who drank coffee during the study more often died of cancer and cardiovascular disease, but were less likely to die from respiratory and all other diseases. Consumption of tea was associated with a lower overall mortality from cancer and cardiovascular disease in men, but did not affect the mortality of women.

But with the replacement of coffee for tea, everything turned out not so simple. Men who replaced coffee with tea during the research, died less often from cancer and cardiovascular diseases. That, in general, fits into the general logic. But Dutch women aged 55 to 69 years, replacing coffee with tea from 1986 to 1996 so that tea in their beverage ration comprised more than 40%, increased mortality risk regardless of the cause of death.

The mind immediately draws a picture where a sick and realizing this sickness lady switches from coffee to tea, as she feels that the body doesn't take coffee so well anymore. And after a while she dies just because she was very sick. But the link looks very convincing: the lady started drinking tea — and that's the end of her. However, the researchers themselves note that the substitution of coffee with tea is investigated for the first time and that further research is needed to confirm or refute the results.

Epigallocatechin-3-gallate for Moisturizing and against Wrinkling

http://www.mdpi.com/1422-0067/19/1/173/htm

Korean specialists studied the effect of epigallocatechin-3-gallate (EGCG) on the skin and found the following. EGCG promotes skin hydration by changing the expression of the hyaluronidase gene (enzyme that, among other things, hydrolyzes hyaluronic acid, which is very important) and hyaluronic acid (one of natural moisturizers), increases the expression of filaggrin (a structural skin protein), reduces the secretion of melanin (roughly speaking, EGCG makes the skin lighter) and the production of melanoma in skin cells (a malignant tumor, the development of which can be provoked, for example, by ultraviolet irradiation). The scientists believe that EGCG can be used as a cosmetic ingredient, moisturizing the skin, preventing the formation of wrinkles, protecting the skin from free radicals and reducing the formation of melanin. So, it's time to dip faces into teacups.

Tea and Nonheme Iron

The relationship of tea and iron, absolutely necessary for our body (all the time, and especially during pregnancy), is far from simple. To begin with, we consume two types of iron — heme and nonheme. Heme iron is contained in products of animal origin, is easily digested and its bioaccessibility practically does not depend on accompanying products. Eating roasted liver, you can be sure of getting the proper dose of iron — regardless of the garnish and drinks accompanying the meal. But with nonheme iron, everything is more complicated. It is mainly contained in the products of plant origin, poorly absorbed (no more than 10% of the consumed) and very capricious — its bioavailability can vary heavily depending on various factors. Including tea consumption.

For example (http://ajcn.nutrition.org/content/early/2017/10/18/ajcn.117.161364), British scientists, having studied non-anemic women, found that taking nonheme iron simultaneously with tea leads to the fact, that the body absorbs only about 4% of this iron (whereas under normal conditions 6% to 10% of iron is assimilated). And if tea is taken an hour after nonheme iron, bioavailability of iron returns to a more or less standard 6%.

Dutch scientists, in turn, studied the possibilities to compensate for the problems arising from the use of tea together with products containing nonheme iron (http://www.tandfonline.com/doi/pdf/10.1080/10408690091189194). And they came to a life-affirming conclusion that if meat, poultry, fish and ascorbic acid are consumed together with tea, then there will be no problems with iron absorption. Tea with lemon and pancakes with salmon, quail, rabbit liver and lamb mince make the best breakfast, as you know.

As if developing this subject, Belgian specialists carefully reviewed 16 studies on tea and iron (http://www.nature.com/ejcn/journal/v56/n5/full/1601309a.html) and came to the conclusion that usual European citizens do not need to be afraid of the “anti-iron” action of tea, because their diet is full of iron sources, which tea simply cannot cope with. Only citizens with iron deficiencies should take care of tea consumption, just not to aggravate their condition. And the rest have nothing to fear.

French scientists, encouraged by Unilever, interviewed a couple of thousands of French men and women about the consumption of black, green and herbal tea (http://www.nature.com/ejcn/journal/v61/n10/full/1602634a. html). Then they examined blood of these people for the iron content. And found that healthy and adult French can drink tea without fear of a lack of iron in their organisms.

At the same time, in Kazakhstan, where the problem of anemia in women is quite acute, the picture is not so good (http://www.nature.com/ejcn/journal/v55/n12/abs/1601267a.html). Having examined more than 3,500 adult non-pregnant women in the Kyzylorda region and studied their diet, the researchers found anemia in more than 40% of women and associated it with tea consumption. Even tougher were the Saudi experts (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5714083/). Having studied 200 apparently healthy female students, they found that the risk of anemia is related to the occasional consumption of red meat and frequent (more than twice a week) consumption of tea.

The antipathy of tea polyphenols and iron is reciprocal, of course. Greek scientists found (http://www.sciencedirect.com/science/article/pii/S0308814604008556) that iron reduces the antioxidant activity of tea. They also found that ascorbic acid increases this very antioxidant activity. Which, given the earlier data that ascorbic acid increases the bioavailability of iron, introduces an additional intrigue into tea-iron relations.

Which is being developed by American scientists who categorically do not recommend simultaneous intake of tea and iron supplements (https://www.sciencedaily.com/releases/2016/03/160308132931.htm). Because tea prevents the absorption of iron, and iron negates many of the beneficial properties of tea.

Well, and the icing on the cake — the work of American specialists who analyzed 13 studies related to iron deficiency (https://www.karger.com/Article/FullText/466706). Five of these studies described iron deficiency in vegetarians, including children. At the same time, researchers caution against the straightforward conclusion that vegetarianism is the recipe for anemia, because the analyzed studies were conducted in very different countries. However, it is noticed that the easiest-to-digest iron is contained in the foods that vegetarians do not eat. Besides, vegetarian diet often includes natural iron inhibitors such as beans, nuts, spinach, parsley, oregano, cinnamon, coffee, red wine, cocoa and, of course, tea.

To sum up everything said above, you need to pay attention to the ability of tea to inhibit the absorption of nonheme iron in case you are in the zone of “iron deficiency risk” due to your diet or for health reasons. Otherwise you need not worry.

Benifuuki and Cytochromes

https://www.ncbi.nlm.nih.gov/pubmed/29275296

Japanese scientists continue examining tea made from the Benifuuki cultivar. Green teas from this cultivar are known to contain methylated catechins and are highly valued by advanced allergic people as a very effective remedy, for example, from pollen fever. This time Japanese specialists have treated rats with along with midazolam. Which is known to be used for the treatment of acute seizures, moderately severe insomnia, to stimulate sedation and anterograde amnesia before some medical operations, and also as a lethal injection. A good choice, in short.

So. In the course of the experiments, it was found that the methylated catechins contained in Benifuuki inhibit cytochromes CYP2D and CYP3A, whose activities affect the metabolism of drugs. But with the coadministration of Benifuuki tea and midazolam, CYP3A is not inhibited, while CYP2D is inhibited.

Tea Consumption and Ulcerative Colitis

http://journals.lww.com/md-journal/fulltext/2017/12080/Beverage_consumption_and_risk_of_ulcerative.108.aspx

Chinese scientists conducted a meta-analysis of the studies where consumption of different drinks was associated with the risk of developing ulcerative colitis — a chronic inflammatory disorder of the intestinal tract. The specialists analyzed observation data for 335,339 people, 3,689 of them had ulcerative colitis. After analyzing the data on the diet of the mentioned people, scientists did not reveal any connection between the risk of developing ulcerative colitis and alcohol consumption. They also found that coffee slightly reduced the risk, but insignificantly (and the effect of coffee depended on smoking); soft drinks increased the risk; and tea, on the contrary, reduced it.

Tea and alcohol instead of coffee and cigarettes!

Low-caffeine Green Tea and Sleep Quality of The Elderly

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5703787/

Based on the observations of a group of ten elderly people with an average age of about 90 years, Japanese scientists found that consuming low-caffeine green tea provides a better sleep than drinking green tea with caffeine. Here is the thing. The knowledge that green tea is good for health has long been a collective and unconscious — and people start drinking it on their own initiative. However, caffeine, contained in green tea, can have a stimulating effect on people, not always desirable. For example, in elderly people, caffeine can cause a deterioration in sleep quality. Therefore, Japanese scientists decided to experiment with several pensioners about 90 years old (at that age, we would not have refused to take part in such a study). They were first given a standard green tea for a week and then low-caffeine green tea for two weeks. During the observation, all participants were put through electroencephalography and the α-amylase level in their saliva was measured (this level increases with stress).

To put it briefly, it turned out that after green tea without caffeine, older people sleep better and wake up calmer than after green tea with caffeine.

Oolong Tea, Especially Its Ethanol Extract, Suppresses Streptococci Well

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5713845/

Indian scientists have studied the ability of green tea, black tea and oolong tea (water-based and alcohol-based extracts) to inhibit the development of *Streptococcus mutans*, which are known to be cariogenic bacteria. In addition to comparing tea extracts with each other, they were compared with a 0.2% chlorhexidine solution, which is widely used for disinfection of the oral cavity. Black tea was about twice less effective than chlorhexidine, green tea — a quarter less effective, but the inhibitory effect of oolong tea was almost similar to the one of chlorhexidine. It is also interesting that in the case of black and green tea, aqueous extracts were more effective against the bacteria, and in the case of oolong, the alcohol extract appeared to be more effective.

Houttuynia, Perilla and Green Tea Stimulate Hair Growth in Mice

https://bmccomplementalternmed.biomedcentral.com/articles/10.1186/s12906-017-2003-x

For 25 days, Korean specialists were feeding female mice with a herbal complex of *Hauttuynia cordata*, *Perilla frutescens var. acuta* and green tea in various concentrations. In the end, they found the increase in the area of hair growth, as well as density, length and diameter of hair follicle in the mice that received the herbal complex. The increase was proportional to the dosage of the complex and was very noticeable in comparison with the mice that did not receive the magic complex at all — from one and a half to three times in different indices. Hauttuynia and perilla are such plants, which are used in Southeast Asia both as food and as a traditional herbal medicine. Especially hauttuynia.

Kombucha Polyphenols against Vibrio Cholerae

https://www.ncbi.nlm.nih.gov/pubmed/29193174

Indian scientists treated the enteropathogen *Vibrio cholerae N16961* with polyphenolic fraction of kombucha, a 14-day fermented beverage of sugared black tea. It turned out that the polyphenols contained in kombucha permeate cell membranes of Vibrio cholerae by generating oxidative stress, and suppress their development. The higher the concentration of kombucha and the longer its interaction with the bacteria, the stronger the suppression.

Tea and Blood Pressure in Chinese Rural Areas

https://www.ncbi.nlm.nih.gov/pubmed/29188874

Chinese scientists have studied the association between tea consumption and blood pressure in 4,579 elderly Chinese people living in rural areas around the city of Suzhou (Jiangsu Province). They have found that people regularly drinking tea have lower arterial blood pressure. Given the prevalent hypertonic problems in the modern world, this is good news although, of course, without detailed — information on the pattern of tea consumption by the people studied, this news is incomplete and somewhat useless.

Tea, Coffee, Vegetables, Fish and a Little Overweight

http://www.jpreventionalzheimer.com/all-issues.html?article=269

Taiwanese researchers conducted a study to find associations between the risks of developing dementia in elderly people and dietary habits of these people. The diet and health of 10,432 elderly Taiwanese from different regions of the island were examined during the study. Approximately one third of them had cognitive disorders of varying severity. After processing the results and taking into account different aspects, experts found that consumption of tea, coffee, fish, vegetables and modest overweight are factors associated with a lower risk of cognitive impairment in older Taiwanese. Interestingly, no associations were found between the risk of developing cognitive impairment and the consumption of fruit. Experts suggest that the positive effect of fruits is compensated by the fact that they contain a lot of sugars.

A Fascinating Journey of Fu Zhuang Tea Polysaccharides

http://www.sciencedirect.com/science/article/pii/S0308814617317120

Chinese scientists simulated how polysaccharides contained in fu zhuang (postfermented tea from Hunan) go through the human digestive system. It turned out that saliva, gastric juice and enzymes of the small intestine leave polysaccharides practically untouched — so there's plenty of them to be absorbed by the microbiota of the large intestine.

Goishicha, Polyphenols and Dyslipidaemia

http://www.tandfonline.com/doi/abs/10.1080/09637486.2017.1386629

Japanese scientists have studied the ability of polyphenols, contained in the Japanese post-fermented tea goishicha, to hinder the development of dyslipidaemia. Dyslipidaemia is a disorder of lipid metabolism, which leads to increased cholesterol levels, thickening of the walls of blood vessels and so on. And it is one of the factors in the development of atherosclerosis. So. The Japanese scientists divided 77 people into two groups which were given two different drinks. One group received goishicha with polyphenols, and the other — a placebo drink, containing ten times less polyphenols. After 12 weeks, an increase in the level of high-density lipoproteins ("good cholesterol") and a suppressed elevation of triglycerides were observed in the goishicha group. Goishicha polyphenols appeared to be especially good for the lipid metabolism of people whose body mass index was less than 25. Well, that is, for normal and thin people, who are usually fine anyway, tea also works better.

There is no justice in this world anyway.

Intradermal Kombucha for Elderly Mice

https://www.ncbi.nlm.nih.gov/pubmed/29152918

Two days ago we informed you that it is possible to make an impressive leatherette from a kombucha — today we have some new information about this tea mushroom. Iranian scientists suspected that the high content of flavonoids in kombucha could mean that it would be good at skin rejuvenation. They fractionated kombucha into chloroform, butanol, and ethyl acetate. Ethyl acetate fraction of

kombucha had the highest polyphenol content and was immediately intradermally administered to elderly mice. This administration significantly increased the collagen content, nicotinamide adenine dinucleotide level, and improved skin connective tissue abnormalities in the aged skin — with no side-effects. Now, probably, Iranian scientists will inject the ethyl acetate fraction of kombucha to elderly ladies.

Green Tea Extract and Bones of Growing Rats

https://link.springer.com/article/10.1007%2Fs00223-017-0358-0

Japanese scientists have studied the effect of green tea extract on the development of the bones of growing rats. To this end, they divided four-week-old male rats into four groups, two of which received standard food for 85 and 170 days, and two received the same food for the same periods with the addition of green tea extract. After 85 and 170 days, scientists examined young rats and concluded that the bones of rats from the shorter experiment (85 days) did not differ, regardless of the type of diet. But in rats on the longer-term tea diet (170 days), there was a decrease in bone mass and malconformation of their microarchitecture.

So, it turns out that for the bones of adult rats, as we already know, green tea is good; but for the bones of growing rats — it can be harmful.

Fish Must Be Cooked and Washed Down with Tea

https://www.ncbi.nlm.nih.gov/pubmed/29096961

Fish consumption, as is known, is a major pathway for mercury compounds exposure (primarily methylmercury) in humans . It is believed that all (100%) methylmercury contained in fish, is absorbed by the human body when eating this very fish and can be very harmful. Canadian scientists have studied the bioavailability of “fish” methylmercury under different and very natural circumstances and found that cooking the fish greatly reduces the bioaccessibility of methylmercury. Not so much, but also significantly, the bioaccessibility of methylmercury is reduced by tea polyphenols. When cooking and tea are used together, the body can absorb only 1% of all methylmercury contained in the fish.

Tea technologies

Agitation Extraction Is The Choice For a Tea Professional

https://www.sciencedirect.com/science/article/pii/S030881461830089X

Korean scientists compared the effectiveness of extracting green tea components applying agitation extraction, ultra-sonication extraction and conventional extraction methods. At different temperatures and at different extraction times. The experts found that the ultrasonic and agitation extraction techniques are at least twice more effective than the conventional one in extracting polyphenols, catechins, flavonoids, caffeine, amino acids and vitamin C. And the best degree of extraction can be achieved if the mentioned progressive methods are used for twenty minutes and at a water temperature of 80 degrees Celsius.

Camellia Sinensis Seed Extract As a Preservative

https://www.sciencedirect.com/science/article/pii/S0963996917308293

Korean scientists tested the extract of tea seeds on two types of yeast (*Zygosaccharomyces* and *Candida*) and two kinds of bacteria (*Salmonella* and *Escherichia coli*) and found that this extract suppresses yeast development, but does not cause mutations of bacteria. That is, tea seed extract can be used as a preservative — it eliminates yeast, and doesn't stimulate bacteria development, demonstrating no mutagenicity.

The inspired scientists tested the tea seed extract on soy sauce and it proved to be a safe and effective food preservative with anti-yeast activity.

Green Tea and Microbial Fuel Cells

https://www.sciencedirect.com/science/article/pii/S0960852418301743

A microbial fuel cell is a biotechnological system that converts the energy of chemical bonds of organic compounds into electricity via microorganisms. As a nutrient medium for such elements, various wastes can be used — the bacteria will process them and produce electricity.

Besides the nutrient medium, for sustainable operation of microbial fuel cells, electron shuttles are needed. They are chemical compounds that stimulate the biodegradation of the nutrient medium by facilitating the transfer of electrons from the bacteria and back. Taiwan scientists have studied the possibility to use green tea and a number of other medicinal plants (chrysanthemums, for example) as such electron shuttles.

It turned out that the extract of green tea is an excellent carrier of electrons. The antioxidant property of tea and the presence of phenols in it prove to be beneficial not only for people, but also for batteries.

A Simple Way To Extract Catechins from Tea Leaves

https://www.ncbi.nlm.nih.gov/pubmed/29372766

Chinese scientists have developed a simple and effective (as indicated in the source) method of isolating seven catechins (including EGCG, of course) from fresh tea leaves. The fresh leaves of Tieguanyin tea cultivar were first “brewed” in chloroform-methanol mixture. And then crude catechins were precipitated from the resulting extract by adding lead subacetate. Then, in two cycles, the precipitate was separated by semi-preparative liquid chromatography with the isolation of the seven target catechins. The method has already passed the test in two other cultivars and, of course, is very simple and accessible altogether.

We always do it that way.

Metabolites of Fourteen Wuyi Rock Tea Cultivars

http://www.mdpi.com/1420-3049/23/2/104/htm

Chinese scientists have published metabolite profiles of 14 Wuyi Rock tea cultivars. The profiles include catechins (10), proanthocyanidins (they are also flavonoids with antioxidant properties, 6), other flavonoids and flavone glycosides (20), flavonone glycosides (3), phenolic acids (4), hydrolysable tannins (3), alkaloids (2, caffeine and theobromine) and amino acid (theanine). All these substances largely determine taste, aroma and healing properties of tea, some of the compounds included in the profiles make it possible to identify the cultivar. In short, for a Wuyi Rock tea explorer, such a study is a regular find.

Here, for example, the highest amount of epigallocatechin-3-gallate is contained in Jinfenhuang, methylated catechin — in Bantyanjao, caffeine — in Shuijinggu, and L-theanin — again in Bantianyao. Beautiful, isn’t it?

Triiodobenzoic Acid and Longjing Shoot Branching

https://www.researchgate.net/publication/319345707_Effects_of_exogenous_TIBA_on_dwarfing_shoot_branching_and_yield_of_tea_plant_Camellia_sinensis_L

One day in May, after heavy pruning of Longjing-43 tea bushes, Chinese scientists sprayed these very bushes with 2,3,5-Triiodobenzoic acid. They found that such spraying promotes dwarfing of tea plants, early lateral bud breaking and effective lateral branch formation, and inhibits the formation of invalid lateral branches. At the same time, it does not affect the rate of photosynthesis and significantly increases spring tea yield. Moreover, the higher the acid concentration, the more pronounced are the obtained effects.

Low and yielding bushes — this is the dream of any tea farmer. In summer, the bushes need to be pruned — and if they are treated with triiodobenzoic acid, this can help avoid another, autumn, pruning and promote the continuous growth of tea plants. And this is a reduction in labor costs, and in the risk of pruning-induced diseases.

Malawi Tea Blockchain

https://www.reuters.com/article/us-malawi-tea-technology/can-blockchain-ensure-unilevers-tea-farmers-produce-a-fairer-brew-idUSKBN1E729G

For one year, the Unilever company (known to most tea lovers by the Lipton brand), the chain of British supermarkets Sainsbury's and Malawian tea farmers will join an IBM project which aims at increasing the information transparency of food products.

In brief, the meaning of the project is as follows. Malawian farmers, for various possible goodies, spill all information about the produced tea (including, apparently, financial information) to the IBM information system. The same is done by Unilever and Sainsbury's. Thereby, together with the Malawians, they create a single information space formed with the use of blockchain technology and allow the consumer to obtain reliable information about any part of the way gone by the tea from the plantation to the consumer. For example, the buyer can find out if there was any unnecessary exploitation or corruption anywhere along the way.

It seems to us that this is a step in the right direction.

Tea, Coffee, Soft Drinks and Glaucoma

https://www.ncbi.nlm.nih.gov/pubmed/29242183

American scientists studied the diet and the state of health of 1678 people in order to evaluate the association between consumption of different drinks and the risk of developing glaucoma. It was found that the consumption of coffee (caffeinated and decaffeinated), cold tea, soft drinks and decaffeinated hot tea had no statistically significant associations with the risk of glaucoma. But those participants of the experiment who drank hot tea had a 74% decreased odds of having glaucoma compared with those who did not.

Dongcha11 — Evergreen and Evergrowing

https://bmcplantbiol.biomedcentral.com/articles/10.1186/s12870-017-1144-x

Several years ago, experts from the Tea Research Institute of Guangdong Academy of Agricultural Sciences discovered a landrace population of tea plants of an unusual variety near Yingde city. The unusual nature of these plants is that they grow in winter, without making a traditional for that area halt in growth for the lack of warm temperatures and sunlight. Moreover, the winter harvest of the new cultivar is not inferior in quality to spring harvests of other cultivars. Chinese specialists have propagated the new cultivar, achieved sustainable preservation of its main feature, named it Dongcha11 and are now studying it. The aim of this study is to understand the mechanism by which Dongcha11 does not hibernate. Apparently, it was not yet possible to identify this mechanism, but, in the meantime, scientists found out that Dongcha11 winter tender shoots have fewer polyphenols, but more sugars and amino acids than Dongcha11 spring tender shoots.

Tea events and phenomena

Swiss Tea Project

https://www.teatimemagazine.com/tea-tour-switzerland-2/9/

For the first time we learned about the Swiss tea projects at the very beginning of 2005, from an article in the Swiss press (https://www.swissinfo.ch/eng/switzerland-to-cater-for-tea-overs/4171738), where it was reported that that year (2005) they were going to have the first tea harvest at a tea plantation on one of the Brissago islands. The island plantation was set out in 2002, and it was rather small — just over a hundred bushes. Such volumes, apparently, did not really suit the Swiss tea enthusiasts, so in 2005, near the islands, but already "on the mainland", in the park of Monte Verita, a new plantation was made, with more than a thousand bushes. And in 2012, the third, also relatively large, plantation was laid out.

Now the Swiss tea project includes the plantations themselves, green tea made from Swiss-grown raw materials, a tea house with everything needed for a classical Japanese tea ceremony or for simpler tea parties, the possibility to host tourist groups and an annual tea festival timed to the harvest. Plus the unchangeable leadership of Peter Oppliger, the author of books on green tea and medicinal herbs.

Here is the project website: https://casa-del-te.ch/de/home/. Stop over, when you have a chance.

Rehabilitation Tea

https://www.denverite.com/open-door-tea-shop-denver-48195/

A small tea house with a symbolic name Open Door Tea Shop opened not so long ago in Denver, Colorado. This name is symbolic because this tea house is a project for the rehabilitation of people who left the places of detention and supports people formerly and currently incarcerated. The main object of this project is not even tea, but pictures painted by prisoners. The tea house is simultaneously a gallery, in which any of the paintings can be purchased. Well, tea, of course, is sold and served there, too — in a format that does not go beyond the average American, but this, in this case, is of no importance at all.

In the tea house, former prisoners work and the profits of the project (primarily from the sale of paintings) go to support prisoners and their families. Here is the project site.
https://www.opendoorteashop.org/

Tea Education Courses for the Near Future: On-site and On-line

Every year around the end of February, the tea tourism season starts, the basis of which is a visit to tea plantations and tea production areas with almost compulsory educational program. Somehow it happens that tea tourists like to learn — and to elephant hunting and hippopotamus riding they prefer thoughtful tasting and making tea with their own hands.

It's a shear to monitor the offers of tea schools. And no less pleasure — to share the results of our observations. The list is not complete, of course. We've selected some of the most sapid proposals.

This year in Darjeeling, week-long tea training courses are to be launched (the first one on Apr. 29 through May 5), hosted by a certified tea sommelier from France and specialists from India. On the one hand — European tea traditions, on the other hand — tea tasting, acquaintance with plantations and production area and the closest possible contact with the tea which, in these very European tea traditions, is certainly and deservedly considered the most famous one.
https://www.eventbrite.com/e/certified-tea-sommelier-and-tea-sensory-training-in-darjeeling-tickets-42162553332

International Tea Academy organizes training in Yunnan in April and in October. Having completed the course, one can become the already mentioned certified tea sommelier.
https://internationalteaacademy.com/collections/live-training

The Italian Pro Tea Academy is organizing a tea study tour in Malawi. An interesting and unexpected direction: http://www.proteaacademy.org/malawi-tea-study-tour-4-10-agosto-2018/

If you do not want to go to tea-growing countries, you can learn something useful about tea near your home. If your home is in Montreal: Canadian International Tea Education Institute is launching blending courses. A tea blender is a trendy and classy profession. http://www.itei.ca/itei-tea-blender--level-1.htm And if your home is in Australia or in Singapore, then you can confidently sign up for the courses of Australian Tea Masters http://australianteamasters.com.au And, finally, if your home is in Russia — visit our Tea school of Sergei Khorolsky and Denis Shumakov. With unique short-term programs focused on consumer tea culture. Have a look. http://goodtea.ru/studio.php

Well, and if your home isn't Montreal, Geelong, Singapore or Moscow, you can always sign up for on-line courses. With a very strong program, by the way. Here, for example, you can find nine training modules from World Tea Academy: https://www.worldteaacademy.com/ And here is Dilmah's Online School of Tea: https://www.schooloftea.org/

Good luck!

Nepal Starts Using a Special Tea Logo

https://thehimalayantimes.com/nepal/nepali-tea-gets-intl-trademark-after-154-years/

Tea has been grown in Ilam, Nepal, since 1863. In 1868, a tea factory was built there. Currently, Nepal produces 4-5 thousand tons of tea a year. Nepal is climatically close to Darjeeling, the tea industry of Nepal was also created by the British — so there is nothing surprising in that Nepali tea is stylistically close to Darjeeling tea. To the degree of confusion.

No one would have liked being constantly a supporting actor — so, this year, the Ministry of Agricultural Development of Nepal has developed a special Nepali tea logo and the rules of its use. The logo shows two stylized mountains, and it says "NepalTea" and "Quality from the Himalayas".

Here you can see it: https://www.biofach.de/en/ausstellerprodukte/bio18/product-9949946/nepal-tea-quality-from-the-himalayas

This logo can only be applied to organic tea. Besides, the producer of the tea must meet the standards of employment security of the workers, sensitivity toward environmental protection, and tea quality standards, of course.

Looking forward to seeing the new logo on tea packs.

TeaTips Brief and The Person of The Year in The Russian Tea Industry

Olga Nikandrova — creator and co-author of our project — was shortlisted for "The Man of the Year 2017 in the Russian Tea Industry" contest, conducted by the magazine "Coffee and Tea in Russia". The reason for the nomination is as follows: "For the successful launch of the unique information project TeaTipsBrief100, publishing daily tea news, designed for professionals who talk about tea".

Not a word of exaggeration. If you're preparing a lecture, tea tasting or just a thoughtful story about tea — look through our news and almanacs: http://teatips.ru/index.php?act=2&id=1505&dep=37. And your life will improve dramatically.

Bury Two Tea Bags and Become a Naturalist

http://www.smh.com.au/national/teabags-buried-on-phillip-island-hold-clues-to-the-secret-life-of-soil-20180203-p4yzcn.html

In 2010, a group of researchers from the Netherlands, Austria and Sweden developed and tested a technique for determining the microbiological activity of the soil by evaluating the degree of decomposition of tea from the tea bags which were buried for some time in the ground. In 2013, the method was published, in 2015 its large-scale application was funded by the Swedish Research Council (Swedish Vetenskapsrådet) — and this funding allowed the launch of the global Tea Bag Index (TBI) project. During 2014-2016 samples of soils from 2000 places were collected; now a new stage of the project has started, to which everyone can join.

In simple terms, the meaning of the experiment is as follows. It is necessary to take two tea bags and bury them side by side in the earth to a certain depth, having them previously weighed. After about three months, the bags should be unearthed, shaken out, air dried, and weighed again while the results should be sent to the organizers of the project (exact instructions in English can be found here: http://www.teatime4science.org/wp-content/uploads/scientific.pdf). With the difference in the weight of tea bags and the time spent by them in the ground, scientists will be able to assess the microbiological activity of the soil at the site of the experiment.

Does it sound not serious? Only if you do not know the details. The highlight of the project is in accurate scales and the fact that the identical bags are used for burying, which available in very many countries. These are the pyramids of Lipton Green tea and Lipton Rooibos. They are made of artificial material, that is, the tea decomposes, and the bag does not, it is very convenient. Lipton does not sponsor this project, but its global approach provides the project's scientific credibility. Though

sometimes it creates complications, too — in 2017 Lipton started using new fabric for its tea bags, which led to the launch of the TBI 2.0 project.

As already mentioned above, all interested persons can join the study, mass tea burying will allow the authors of the project to obtain thematic soil maps of different regions. In addition, the project launched several subprojects, designed for schools or for universities and more detailed analysis of the contents of tea bags.

A beautiful project indeed!

The Tea Strainer Is Good for Sorting Ants

https://www.livescience.com/61614-reviewforscience-amazon-reviews.html

One day, Robyn Womack, a zoologist from Scotland, decided to buy a new tea strainer to use it for its intended purpose. Studying different strainers on Amazon, she suddenly came across a review under one of them, in which another zoologist, John Birch, informed that he didn't know how good this particular strainer was for making tea, but sorting ants with it was very convenient.

The screenshot of the review was immediately published on Twitter and a viral campaign (#reviewforscience) has launched, in which scientists write how to use everyday products for scientific purposes.

Dental floss makes an excellent lasso for catching lizards, the coffee grinder is good for grinding up soil samples, and with the help of small brushes for cleaning the spaces between the teeth it is convenient to scrape the contents of very small bird skulls.

Recipes from old times spring to mind. Waste tea leaves are an excellent feeding for earthworms, a box with which was at all times kept in the house of any self-respecting winter fisherman. Used tea bags, pre-cooled, are good to impose on the eyes, tired with office work…

And it's so sad to think about those small birds.

Dunking a Biscuit into Tea, Diving 73 Meters

http://www.guinnessworldrecords.com/news/2016/11/guinness-world-records-day-british-thrill-seeker-dunks-biscuit-into-teacup-durin-450757

The English bungee jumper Simon Berry in as early as 2016 was able to dunk a biscuit into tea, jumping off with his elastic cord from a height of 73 meters 41 centimeters. The jump was very impressive, it exceeded the previous record by just over ten meters and, of course, was immediately committed to the Guinness Book of Records.

Dunking biscuits into tea is not the principal, but a very vivid British tea tradition and one of the symbols of British everyday life. Therefore, biscuit dunk is often a target for humor or research, a source of inspiration for tea-ware designers, and a challenge for extreme dunkers.

Used Tea Bags Art

https://mymodernmet.com/miniature-paintings-tea-bags-ruby-silvious/

In 2015, a New York artist Ruby Silvius (Ruby Silvious) began to make miniature paintings on used tea bags. Approximately one per day. In some time, painted tea bags made the album 363 Days of Tea (http://www.rubysilvious.com/the-book-), which can be a good adornment for any tea room. The artist continued to paint on tea bags — and now, on her website (http://www.rubysilvious.com), you can admire several cycles of tea miniatures.

It looks magical. You can enjoy it every day here https://www.instagram.com/silvirub/ or here: https://www.facebook.com/ruby.silvious. Of all the variants of utilizing used tea bags, this is perhaps the most beautiful.

Coffee-and-a-little-tea Cluster

http://vietnamcoracle.com/the-cafe-apartment-on-saigons-walking-street/

In Vietnam, in Ho Chi Minh City, an old nine-storey apartment building was reconstructed so that each apartment with a balcony turned into a small coffee shop (more often) or a tea room (less often). And it turned out a classic cluster, that is, a system in which each element works not only on itself, but on the system as a whole; and enjoys common bonuses, of course. The whole thing is called Café Apartment, all institutions in the cluster are different, they look classy from the outside (http://yourshot.nationalgeographic.com/photos/11395304/), inside, we hope, everything is fine, too.

Tea Scented Candles

https://www.timeout.com/bangkok/news/the-worlds-leading-tea-brand-twg-introduces-five-new-tea-scented-candles-to-tea-lovers-010318

TWG — a Singaporean tea company that works in an emphatically expensive and kind of French style — has launched a line of candles with different tea scents. Tea scented candles in general are not anything new, of course. But candles with specific and diverse tea scents — this is something interesting. Black tea, Sencha, French Earl Grey, Five-o'clock (what should it smell like, by the way?) and six more tea aromas. Approximately 55 euros apiece, here is the list: https://twgtea.com/find-a-gift?theme=58.

Their list of tea delicacies, by the way, is also interesting: https://twgtea.com/for-the-tea-table?category=Gourmet%20Delicacies

Jewelry-themed Afternoon Tea in Beijing

https://www.thebeijinger.com/blog/2017/12/26/four-chic-beijing-jewelry-afternoon-teas

The 'jewelryzation' of the traditional British Afternoon tea is an obvious enough idea. Any ringlets with earrings can be placed on a plate with appetizers, the delicacies themselves can be decorated with noble metals or precious stones or stylized to jewelry boxes and cases — in short, there is a good

scope of work. And, of course, Jewelry Afternoon Teas are served from time to time in a variety of places, both for direct use and for other purposes. For example, in order to take beautiful pictures.

For reasons that are unknown to us, jewelry Afternoon Tea theme has been especially densely presented for this New Year in Beijing. In the material under the link, there's a reference to four places where you can not only drink tea in the traditional English style, but also combine it with an unusual jewelry experience. The key is not to confuse the edible with the inedible.

Festive Tea Test

On December 15, as is known, all progressive mankind celebrates International Tea Day — a day of solidarity with tea industry workers. It is largely due to their hard work for very little money that tea remains the second most popular beverage on earth after water. In countries with a dominant of consumer tea culture, this day pulled away from its plantation roots and is rather perceived simply as a tea party. The magazine *Coffee and Tea in Russia* with our direct involvement, has prepared a small tea quiz. 25 questions, answering which, you can check your own tea erudition and versatility of knowledge. So far, only in Russian. Here is the link: https://apps.facebook.com/fb-quizzes/tea-quiz-2017

Christmas Tea with Prosecco

http://www.mirror.co.uk/money/aldi-launch-prosecco-infused-tea-11637514

We continue monitoring tea and wine intersections. Recently, for example, the global discount supermarket chain Aldi has released a small line of Christmas teas with alcoholic and festive overtones. The line includes two prosecco-style drinks: Elegant Prosecco (decaffeinated) and Fabulous Raspberry Prosecco (with raspberries and other fruit). And also Warming Mulled Wine (apple, cinnamon, orange, cloves, vanilla and all) and Sophisticated Espresso MarTeani (something cocktail-style with the flavor of martini and coffee).

Two pounds for 15 teabags. Unfortunately, we don't have information on the teas included in the blends. And yes, here, in Russia, for the sake of stylistic impeccability, the line of Christmas Prosecco teas would have to include a tea with the flavor of Olivier salad (Russian salad) and mandarins.

Afternoon Tea with Anhui and Yunnan Old Teas

https://www.washingtonian.com/2017/11/08/another-watergate-scandal-dc-the-hotel-now-offers-400-high-tea/

Washington's Watergate Hotel, where the standard serving of Afternoon tea costs $50 and includes, in addition to tea, a nice selection of sweets and sandwiches, offers some options to the tea drinking. One can replace the standard tea by pu-erh from 2001 (without additional payment), pu-erh from 1982 (+55 dollars to the bill) or cave aged pu-erh from 1949 (+350 dollars to the bill). The corresponding page of the hotel site (https://www.thewatergatehotel.com/dine-and-drink/afternoon-tea) has no information about the tempting offer, so all comers will have to go straight to the hotel. Don't forget to make a preliminary reservation call, because real Afternoon tea is not a joke.

Apparently not too far from The Watergate Hotel there is another hotel, Washington D.C. Park Hyatt, where they also serve Afternoon tea (https://washingtondc.park.hyatt.com/en/hotel/dining/tea-cellar.html). And they also want money for it. In the standard version — $55. Well and then according to the same scheme — instead of a usual tea it is possible to order an unusual. A tea pot of the most unusual tea (it is a hardly-identifiable Anhui tea with the meaningful name "Emperor's Masterpiece") will cost you $300. Well, simply because less than 7 kilograms of this tea was made in 1985 and it was hand carried out of China after five years of negotiations. You can read about it here: https://washingtondc.park.hyatt.com/content/dam/PropertyWebsites/park/wasph/Documents/all/Tea-Cellar-Menu-102517.pdf

Kombucha Leatherette

http://www.huffingtonpost.com.au/2016/11/30/scientists-designers-and-students-are-making-vegan-leather-fr_a_21617945/

In 2003, Suzanne Lee, a London designer, developed the concept of leather-like material made from kombucha. In theory, everything is very simple — kombucha is pulled out from the jar, dried and then used as leather. In 2014, the cunning concept was tested in practice by students and scholars from the Queensland University of Technology. Kombucha was not only pulled out of the jar and dried, but also washed and stretched. Experts say they've also worked on oils to make these less sticky and more durable.

It's difficult to evaluate consumer qualities of the new type of leatherette, of course. But vegans, they say, will be satisfied. Because no one has compassion on the symbiosis of yeast and acetic acid bacteria and the unique and compact ecosystem that feeds on tea.

Tea It Yourself — Kits for Newbie Blenders

https://www.tea-it-yourself.com

Tea it yourself is a tea shop of the Canadian company MMTUM, dealing with innovative product projects. For example, molecular gastronomy or distillate production. Their tea shop is also unusual — in fact, they sell educational kits for making your own tea blends. You can, for example, mix three organic black teas to make your own tea for breakfast. Or make a mighty healthy tea and herb blend using different green teas and additives to them.

The idea of blending kits is not new and was repeatedly brought to life in many ways. We do not know what's there now, but in 2004 in London, the flagship store of Whittard of Chelsea had a special stand where customers could make their own flavored tea from several tea-bases, various additives and aromatic oils. We did not chance it then.

Snarky Tea

http://www.phillymag.com/business/2017/11/07/shark-tank-snarky-tea-philadelphia/

SnarkyTea is an American tea project that differs from many other American tea projects by the emotional names of all teas, expressively describing their effects, functions or cultural roots. Well,

something like “Namaste, motherfucker!” (plural form of address would sound even better, by the way, for such a name would immediately arise an impressive image of a sergeant). The author of the project chose this progressive naming after a medical ban on coffee, as an attempt to explain to herself what this or that tea is good for. Such a functional and energetic approach has found a lively response in the hearts of investors — but its consumer appeal seems to us a little controversial, and not because of abusive language. A purely functional attitude to tea is a dead end, in our view.

The assortment in the store is small, only six teas. Minimalistic girl. Here is the link: https://www.snarkytea.com/

Tea traditions

Cha-Koji. Peculiar Tea from Japan

https://www.tandfonline.com/doi/full/10.1080/09168451.2018.1443789

Koji is a generic name for several Aspergillus fungi widely used in Japan, China and, most likely, in other countries, for the preparation of products that need to be fermented. Two of the best-known prepared with koji are saké and soy sauce. Koji can develop on any substrate, including tea, of course.

Cha-koji is green tea, fermented using *Aspergillus luchuensis var kawachii kitahara* and some bacteria. The first commercial samples of this product appeared on the market about five years ago — and just recently Japanese scientists have studied the effect of tea-koji on regulatory T cell production in humans and in mice. Regulatory T cells are the central regulators of the immune response, that is, in fact, the scientists were looking for the associations between cha-koji consumption and immunity.

Everything turned out well. Both in humans and in mice, the use of tea-koji was associated with an increase in the number of regulatory T cells — which means that this drink strengthens the immune system. It is not very clear, though, what component (tea or fungi) of the drink has this effect and what is the mechanism of action.

In Russia, Monkeys Drink Tea with Lemon, and in England — with Milk

http://kazan.mk.ru/articles/2018/02/28/obezyanam-v-kazanskom-zooparke-dayut-chay-s-limonom.html

There are things that are part of the work for some people and a source of wonder for others. For example, when it's cold, animals in zoos are often treated with warm tea — both for warmth, and for vitamins. Of course, not all animals drink tea — but elephants and monkeys usually do.

And then, of course, catchy headlines appear in the news. Especially if elephants are tea-drinking. This winter, elephants have not yet hit the headlines, only monkeys. In England, they even have a video with such a monkey — with tea, and with a blanket.
https://www.youtube.com/watch?time_continue=9&v=HqaTMPzD31g

The most interesting in the two news under the links is that in Russia monkeys are given tea with lemon, and in England — tea with milk. That's how people transfer their habits to animals, without asking their tastes and preferences first.

Benedict Cumberbatch Convincingly Portrayed a Teapot

http://kgmi.com/news/030030-you-could-have-tea-with-benedict-cumberbatch/

While we are fooling around here, Benedict Cumberbatch offers to win two tickets to Hollywood for the premiere of the movie "Avengers: Infinity War" and a tea party with his participation. In order to take part in the draw, you need to make a donation to a charitable foundation that works with Africa.

In order to demonstrate how the tea-drinking with Cumberbatch looks, the actor recorded a video, in which, among other things, he performed the part of a little teapot.

The video is under the link. The kettle is in the middle.

New Tea Sailing Record

http://www.sailingscuttlebutt.com/2018/02/23/maserati-sets-new-tea-route-record/

The team of the trimaran Maserati Multi 70 (captain Giovanni Soldini) has sailed the almost classical tea route from Hong Kong to London around Africa in 36 days, 2 hours, 37 minutes and 2 seconds, improving the previous record by more than five days. From the real tea races of the XIX century, the modern Tea Route is distinguished by two nuances — the ships start from Hong Kong, and not from Fuzhou (that is, the modern route is slightly shorter), and go without cargo (although there is no doubt that symbolic tea is on board) . But even with these nuances in mind, the fact that modern sailboats cover the route three times faster than tea clippers is impressive.

Here's a video about the trimaran: https://www.youtube.com/watch?v=UJ9ca1DH2_O
A beauty!

In Dickens's World, Good People Drink Tea, and Scoundrels — Coffee

https://www.npr.org/sections/thesalt/2018/02/07/584005673/coffee-or-tea-in-dickens-world-it-might-be-a-choice-between-good-and-evil

British food historian Pen Vogler studied the descriptions of food and drinks in the works of Charles Dickens, reasoning sensibly that such descriptions, in addition to solving purely narrative issues, can characterize the characters of the works. Pen Vogler suggested that Dickens's attention to what the characters eat and what they drink could be exacerbated by a difficult period in the author's childhood when he was undernourished and forced to work at the insistence of his mother.

So. It turned out that many positive heroes of Dickens's drink tea and have a restrained and mild, warmhearted character, and many negative characters, vivid and memorable at that, drink coffee and are consumed with vigorous and painful passions.

Let's not forget, however, that the tea calmness was much better suited to Victorian aesthetics than coffee energy. And Dickens, giving his heroes addiction to different drinks, not so much self-reflected, but rather created an attractive literary reality for readers. Approximately from the same considerations, Leo Tolstoy killed Anna Karenina using a train.

Note also that there are works of art with a completely opposite approach to drinks. For example, almost all Jim Jarmusch's characters in "Coffee and cigarettes" are cute to a degree and drink coffee. And only one unpleasant show-off is drinking tea. And it seems a herbal one at that.

What a shame.

Delicate Insect Tea

In the culture of some ethnic minorities in southwest China, there is a beverage, the raw material for the preparation of which is feces of some insects (*Aglossa dimidiatus*, *Hydrillodes morose*, *Nodaria niphona*), which live, feed and carry out other vital functions on Siebold's crabapple (*Malus sieboldii*), platycarya (*Platycarya strobilacea*), large-leaved Kudingcha (*Ilex kudingcha*, the very plant kuding tea is made from) and *Litsea coreana*. Of course, a drink obtained from this unusual raw material is not tea, strictly speaking, — but in the culture of the above-mentioned minorities, it appears under the names composed of some specific Chinese word and the word "tea". Because it is brewed like tea, in a cup it looks like tea and is used as tea. For such drinks there is also the general name — 蟲 屎 茶, Chong Shi Cha, and we will delicately call it "insect tea", so as not to translate literally the hieroglyph 屎.

Insect tea is classified by the combination of "insect + nutritive base", for example, *Aglossa dimidiatus* makes Sanye insect tea when feeding on Siebold's crabapple makes, and Guizhou insect tea — on *Litsea coreana*; while *Hydrillodes morose* creates Hua-xiang insect tea feeding on platycarya. And, perhaps, so on — we have no data on other combinations.

Insect tea can be produced in different ways. For example, leaves of Siebold's crabapple tree can be plucked, dried, brewed to make a daily drink, after which the waste leaves are dried again and sprinkled with water remaining from washing rice, about every two weeks. After a while, the required insects appear on them — and the production begins. Yearly 10 kilograms of leaves yield one kilogram of insect tea, which is sold for 50-70 dollars in situ, so the price can increase five- to tenfold when the tea reaches the end consume.

Ethnic minorities of Sichuan, Hunan and Guangxi use insect tea in folk medicine, mainly (but not exclusively) for the treatment of diseases associated with the gastrointestinal tract. Insect teas contain amino acids, minerals, fatty acids and essential oils. In addition to the experience of many generations, there are studies confirming the effectiveness of the insect tea in gastrointestinal diseases, hypoglycemia and hypertension. It helps mice with hydrochloric acid and ethanol-induced acute gastric injury (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5704295/) and has preventive effects on buccal mucosa cancer (http://www.cancerjournal.net/article.asp?issn=0973-1482;year=2014;volume=10;issue=3;spage=651;epage=657;aulast=Zhao). Besides, insect tea has a pronounced antioxidant effect, and what's interesting, the antioxidant effect of insect tea collected on kudingcha, for example, is more pronounced than that of the kuding tea itself (https://www.ncbi.nlm.nih.gov/pubmed/29351230).

The world is full of surprises.

A Large Cup of Tea at Global Village Dubai

https://www.khaleejtimes.com/global-village-2017-18/global-village-dubai-to-make-worlds-largest-cup-of-tea

An attempt to make a 4500 liter cup of tea and thus break the Guinness World Record will be undertaken (or was already undertaken — depends on when you read this news) on January 25, at the Global Village Dubai 2017-2018. This cup will (or was) not just with tea, but with a drink called "karak

tea". Karak tea is one of the names of masala chai — that is, tea with milk and a fairly arbitrary set of spices.

In addition to the record-breaking cup, the Global Village Dubai has an interesting tea program realized mainly in small national pavilions.

Mariah Carey Warmed Up Tea Sales

https://nypost.com/2018/01/13/mariah-carey-effect-causes-uptick-in-demand-for-tea/

On the New Year's Eve, during her performance for *Dick Clark's New Year's Rockin' Eve* show, in New York, Mariah Carey complained of the lack of the promised hot tea and noticed that she would have to do without it as well as the guests of the event. The benevolent audience appreciated the easy show-off and launched a series of memes built around the word 'tea' (hot tea moment, found my tea, etc.). The singer responded with the publication of tea photos on her Instagram, released a new line of T-shirts and mugs, and employed media resources that popularized both tea, and the singer. It is not yet clear what the benevolent public will answer, but tea sales in New York are said to have already grown. Whether it is connected with the general trend of the market, the cold winter or the classic 'diva moment' of the singer, is not clear, but it made a beautiful stir.

Tea and Other Non-alcoholic Genetic Influence

https://www.nature.com/articles/s41598-017-17020-x

English scientists have studied 2,865 twins at the age of 18-19 years in order to quantify genetic and environmental influence on variation in liking for such non-alcoholic beverages like soda of varying degrees of sweetness, cordials (in this case we are talking about fruit juices diluted with water, in Russia we call them nectars), orange juice, tea, coffee and milk. It turned out that the genetic predisposition weakly or moderately affects the formation of non-alcoholic preferences. The highest genetic factor was found in cordials — 42%, in tea it amounted to 41%, coffee — 29%, and the lowest — in orange juice, 18%. And, accordingly, for the most part (e.g. for tea — in 59% of cases) the choice of a non-alcoholic drink at the age of conscious non-alcoholic self-identification is influenced by the environment. Advertising, fashion and all that. English scientists are interested in all this matter as a justification for adjusting the consumption of unhealthy drinks — all that sweetened soda.

In the meantime, we will happily note that the chance to genetically transfer our interest to tea, whatever one may say, is quite high (coffee-lovers are less lucky). With three or four children in the family, the genetic factor will work for sure.

Our goals are clear, the tasks are defined!

170 Years of Georgian Tea

https://www.facebook.com/events/288263558351557/

In 1847, governor-general of the Novorossiysk and Bessarabia districts and viceroy of the Caucasus Prince Mikhail Semyonovich Vorontsov signed an order to transfer tea bushes from the Nikitsky

Botanical Garden in Crimea to Ozurgeti, in Georgia. This event can be considered the start of the Georgian tea industry, the Georgian tea culture and all other wonderful things which make up the concept of Georgian tea.

This year Georgian tea is 170 years old. Small but pleasant events dedicated to the jubilee will be held in the coming days both in Georgia itself, and in countries historically connected with Georgia and its tea.

Afternoon Tea Technique

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5665125/

British scientists decided to share their teaching technique for probe stabilisation during ultrasound-guided intravenous access. They called this method Afternoon tea technique. It has nothing to do with tea, of course, but it is still very beautiful. Because if you hold the probe like an ordinary pencil, then it's a little hard to stabilize the probe, and the quality of scanning decreases. But if, while holding the probe in the place to be probed (at the needed blood vessel), you stick out the pinkie, keeping it in contact with the patient's skin, the probe will be stable and the quality of the image will improve.

Here we are all being told that sticking out the little finger when drinking tea is a mauvais ton and all. But there can't be arguing against the collective unconscious (especially if it's British and medical) — it is the raised little finger that is a universal symbol of exquisite tea drinking.

Everything You Wanted to Know about Breakfast Tea, But Were Afraid to Ask

http://www.t2tea.com/en/au/tea/black-tea/breakfast-tea/

Under the link — a page of the T2 online store with breakfast teas. In addition to a traditional English breakfast tea, there you can buy tea for New York, Melbourne, Adelaide, Irish, Canberra, Sydney, Brisbane, Perth, Hobart, Aussie and, of course, fairtrade and organic breakfast time. Given the Australian history, all these geographical tea names should be as close to a sympathetic Russian person as names like Vorkuta breakfast, Magadan breakfast and Kolyma breakfast. Music to one's ears!

Seyshelles Tea

http://www.seychellesnewsagency.com/articles/7920/Tea+trails%2C+tour+of+factory+in+Seychelles+give+tea+lovers+new+insight+into+popular+drink

This posting is meant exclusively for the expansion of the tea horizon. The Seychelles has tea plantations and produces tea there. Approximately one hundred tons a year — very little, in fact. Seychelles Trading Company (STC, http://www.stcl.sc) is engaged in all tea production and all tea trade in Seychelles, and it seems, at first glance, that this company manages all business in the islands. Seychelles tea is sold under the brand SeyTe — and its product line includes black tea, green tea, a bit of flavored tea and, as a flagship, Silver Tips white tea in a glass jar. In short, there is something to taste.

Seychelles tea has a short and entertaining history. As an agricultural crop it was brought to the island only in 1960, and brought in seeds from Kenya. The first tea seedlings were grown in the nursery in Port Glaud (it's on the main island, Mahé). A little later, a tea plantation was cultivated on Morne Blanc hill, in 1966 a tea factory was built there, followed by a tea tavern (https://www.seychellespromo.com/page/Entertainment/Bars-and-Restaurants/Tea-Tavern- Cafe-781.html). All these things, including the tavern (Tea Tavern Café) still work, Seychelles tea is exported to the Great Britain, Germany and Japan. And Bill Henderson, a pioneer of Seychelles tea and a Scot, now lives in Australia and is said to visit the Seychelles tea plantations from time to time.

Export of Japanese Tea as Part of Imperial Policy

https://news.uark.edu/articles/40150/historian-presents-research-on-japanese-tea-exports-muslim-china-and-expanding-markets

News from University of Arkansas. On November 10, Kelly A. Hammond, Department of History, J. William Fulbright College of Arts and Sciences, presented her research "Hot Commodity: Japanese Tea Exports During World War II, Expanding Markets in the Muslim World, and Muslim interlocutors". It is devoted to the export of Japanese tea to traditional Islamic markets and the place that this export and accompanying activities occupied in Japan's expansionist policy during the Second World War. In particular, the research touches upon the work of the Japanese Islamic Association and the use of Chinese Muslims to promote tea in the Middle East, North Africa and South Asia. In fact, 70 years ago, the Japanese worked in an area that is still extremely relevant — they were creating new consumer tea cultures. Therefore, Kelly Hammond's research must be obtained somehow and her future book on Japan's relations with the Islamic world should also be sought after.

Tea recipes

The Optimal Antioxidant Mixture of Tea, Mate and Rooibos

https://www.sciencedirect.com/science/article/pii/S0308814618302474

Brazilian scientists reasonably decided that if there is a lot of data on the separate curative properties of white tea, roasted mate and fermented rooibos, then these three beverages must be mixed at once and tested for their overall healing power. And then the composition of the blend must be optimized according to a certain curative criterion — for example, according to the manifested antioxidant properties.

The resulting blend of the optimal antioxidant composition inhibited 64% the lipoperoxidation in vitro, contained a large number of phenols, catechins and rutin. Moreover, it retained these valuable properties through a half-hour pasteurization at a temperature of 65°C. As for the composition of the optimal blend of tea, mate and rooibos, the approximate ratio of components in it should be 50-70% of tea, 20-40% of mate, and about 10% of rooibos. Although, it seems, one can do without the latter at all.

Biscuit Flavor Tea

http://metro.co.uk/2018/03/19/yorkshire-tea-has-just-launched-some-tea-and-biscuits-flavoured-tea-bags-7398283/

Yorkshire Tea — the second most popular tea brand in the UK — has launched a new flavor of tea Biscuit Brew, which tastes like cookies. The creators of the unusual drink explained its appearance by the desire to help those people who have difficulties with dunking biscuits in tea (this very dunking, by the way, is part of the everyday English tea tradition). It can be scary, in fact, to find out in the morning that there is no biscuit for dunking into tea at home, or there is, but it is too big for your mug. And here Biscuit Brew comes to the rescue. Which, in addition to the already mentioned taste of cookies, also has certificates of the Rainforest Alliance and is gluten-free. Our colleagues from Bettys and Taylors of Harrogate are very caring.

Jun. Kombucha Fed on Honey and Green Tea

https://www.mindbodygreen.com/articles/what-is-jun-tea

It turns out that there is a SCOBY (symbiotic culture of bacteria and yeast) which, unlike a common tea mushroom — Kombucha, feeds on green tea and raw honey rather than black tea and sugar. This SCOBY produces a drink which is less sweet, fizzier, more alcoholic (up to 6% alc.) and lighter-coloured than kombucha. And more expensive, of course (here the difference is estimated as tenfold: https://www.thehealthyhomeeconomist.com/how-to-make-jun-tea-kombucha-champagne/).

The drink is called jun (Jun, Jun Tea, Jun Kombucha) and kits for its preparation can be found on the market (http://fermentaholics.com/shop/organic-jun-scoby/). The method of preparing jun is completely analogous to the one of preparing kombucha, the main thing in it is a three-liter jar. When

the merits of jun are described, the drink is often compared with champagne, called a Tibetan traditional drink (there is no exact information, but it is very likely that it has Chinese-Tibetan origin) with a variety of healthy effects (the drink is not yet thoroughly studied, so most of it is hypotheses) and good dietary potential (because it's made without sugar).

Jun, of course, is already on the market. In bottles (http://www.moonbrewtonic.ca/jun-tonics/, https://www.wildtonic.com/products/wild-tonic-na/), on tap (http://revel365.com/), in topical bars. But the new beverage has not gained widespread use yet — which, with its attractively high alcohol content, is a little strange. But we'll wait until the summer. Until June.

Pacific Oysters And Cold-Brewed Tea

http://www.marinatimes.com/2018/02/pair-your-oysters-with-tea-this-valentines-day/

Infusion of tea in cold water (cold brew, ambient brew and other trendy terms) allows not only to prepare a delicious, delicate and refreshing drink, but also significantly expands the gastronomic range of tea. Firstly, because cold tea can be served in wine glasses (hot too, but there are nuances) — this is important from a technological and aesthetic points of view. Secondly, because cold tea can be paired with foods and dishes that do not go well with hot tea. For example, with oysters.

The Marina Times published Anna Mariani's suggestions for pairing various Pacific oysters with different cold-brewed teas. Here is the list of combinations.

Capital oysters (Washington, small, medium salinity) and Chinese white tea Bai Hao Yin Zhen. Chelsea Gem oysters (Washington, small, slight salinity) and Tamaryokucha — Japanese green tea. Jenell's Shells (aka Totten Inlet oysters, Washington, medium-sized, medium salinity) and lightly fermented Thai oolong or milky oolong from Taiwan or China. Pacific Gold oysters (California, small and salty) and Chinese green Long Jing tea. Hog Island Sweetwaters (California, medium and salty) and Chinese high-grade green Gunpowder tea.

The general principle of the pairing is noticeable at once — the saltier the oysters, the richer the taste of the tea. The principle is, though simple, but wise and productive, especially with the first experiments.

To prepare cold-brewed tea, put five to ten grams of tea in a jug or a bottle, add 1l water at room temperature and let it infuse for half an hour to one hour. The resulting beverage must be filtered, cooled (if necessary) and served in any convenient dishware, for example, in the already mentioned wine glasses. You can also put the tea to infuse in the refrigerator — only it will take a little longer.

Spanish Extraction of White Tea

http://www.sciencedirect.com/science/article/pii/S0308814617320228

Spanish specialists have studied the different regimes of brewing white tea in order to determine which of them yields the best sensory properties and health benefits. Before the full text of the study is published (expected in May 2018) it is not very clear what white teas participated in the experiment

(there were 80 of them, in bags and leaves), so the results leave a wide field for interpretation. And they are as follows.

The best way to brew white tea in terms of extracting antioxidants was a seven-minute infusion at 98 degrees Celsius. The same extraction method was also evaluated by specialists as the most “delicious”. Tea bags, with all other things being equal, produced twice as much antioxidants as loose leaf tea infusions. Under identical brewing conditions, green teas (apparently, they were also tested) showed higher antioxidant capacity than white teas. And, finally, one cup of white tea contributes to a 22% of the daily antioxidant intake in Spain.

Tea Gin on The March

http://www.irishexaminer.com/breakingnews/business/barrys-tea-gin-is-just-the-tonic-819143.html

Blackwater Distillery (a famous Irish gin producer), together with specialists from Barry's Tea (a no-less-famous Irish tea company), has launched a limited series (10,000 bottles) of gin made with the following ingredients: Barry's Tea Classic Blend (black tea), Sicilian lemons, sweet Spanish oranges, juniper berries and cinnamon. All this stuff, including tea, is added to the grain alcohol, after which this fragrant mixture is distilled — well, they are always doing it with gin.

A bottle of Barry's Tea Gin costs 35 euros. Here is a description of the product on the manufacturer's website: http://blackwaterdistillery.ie/blackwater-barrys-tea-gin/.

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