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ESG / SDGs

SUSTAINABLE JAPAN MAGAZINE

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Our planet,our plans

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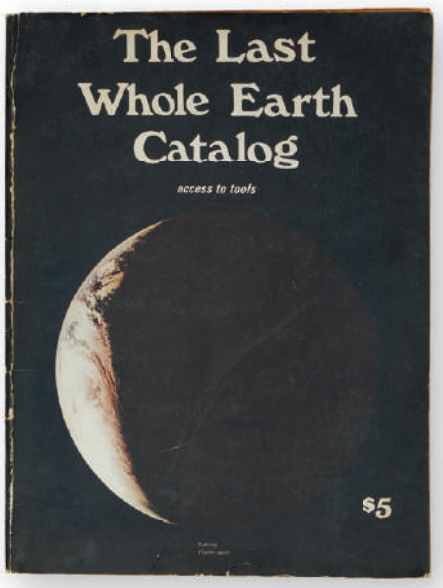


The cover of The Last Whole Earth Catalog, the final issue, published in 1974

PHOTO: KOUTAROU WASHIZAKI

Editor's note

Sustainable Japan Magazine by The Japan Times is a monthly publication exploring sustainable lifestyle choices and the future of our planet from the perspective of our everyday lives

It is no longer possible to go about daily life and work without being aware of environmental, social and governance (ESG) issues and the U.N. sustainable development goals (SDGs). They are two crucial concepts as we address the problems of global warming, environmental pollution and economic disparity.

This magazine's cover shows the final issue of the legendary Whole Earth Catalog,published in California in 1974.

One its back was the phrase "Stay hungry. Stay foolish." Apple founder Steve Jobs quoted these words in a Stanford University graduation ceremony speech on June 12, 2005. Jobs' speech triggered renewed interest in the publication, which, as he noted, had been a bible to 1970s teenagers like himself.

The Whole Earth Catalog was created by an editor named Stewart Brand (1938-), with the first issue published in 1968. Arising out of the West Coast counterculture, it sought to provide the tools, knowledge and ideas necessary for individuals to live without depending on the government or large companies. In an era before personal computers, the Whole Earth Catalog was a magazine analog of Google, providing a broad collection of information necessary for daily life. The cover of the first issue featured a satellite photograph of the blue Earth floating in the pitch-black cosmos — letting ordinary people see the Earth in its entirety for the first time.

Brand remembers thinking, "In order for us to think seriously about our future, we need to see the whole planet, and we need to share that image with people." However, during that Cold War era, satellite images were classified because they were national military secrets. Having heard rumors that NASA had such a photograph, Brand launched a successful campaign to get it released publicly.

One of the people who lent support to the campaign was the architect and futurist Buckminster Fuller (1895-1983). Fuller had long been conscious of the need to identify ways to make human existence sustainable. His idea of "Spaceship Earth" in particular had been a great influence on the young Brand. Fuller compared the Earth to a spaceship, with finite resources that must be used effectively. He also published the "Operating Manual for Spaceship Earth" in 1969 to address our economic activities and resource and energy issues from the perspective of the universe. In it, Fuller warned against the continued consumption of finite fossil fuels and emphasized the importance of utilizing renewable energy from wind, water and the sun. At the same time, he noted the impossibility of using renewable energy within the current economic and political systems, and emphasized the need for social and educational reform.

Sustainable Japan Magazine will deliver fascinating information on food, architecture, travel, fashion, art and more from Japan on the last Saturday of every month from the perspective of ESG and SDGs.

Thinking about sustainable lifestyle choices and the future of our planet from the perspective of our everyday lives, Sustainable Japan Magazine will help you create those opportunities in your life.

Steve Jobs' Stanford University graduation speech

(June 12, 2005)

When I was young, there was an amazing publication called The Whole Earth Catalog, which was one of the bibles of my generation. It was created by a fellow named Stewart Brand not far from here in Menlo Park, and he brought it to life with his poetic touch. This was in the late 1960s, before personal computers and desktop publishing, so it was all made with typewriters, scissors and Polaroid cameras. It was sort of like Google in paperback form, 35 years before Google came along: It was idealistic, and overflowing with neat tools and great notions.

Stewart and his team put out several issues of The Whole Earth Catalog, and then when it had run its course, they put out a final issue. It was the mid-1970s, and I was your age. On the back cover of their final issue was a photograph of an early morning country road, the kind you might find yourself hitchhiking on if you were so adventurous. Beneath it were the words: "Stay Hungry. Stay Foolish." It was their farewell message as they signed off. Stay hungry. Stay foolish. And I have always wished that for myself. And now, as you graduate to begin anew, I wish that for you.

Stay hungry. Stay foolish.

毎日の生活の中から、持続可能な生活習慣や
地球の未来のことを考える月刊新聞がスタートしました。

白井良邦（サスティナブルジャパンマガジン編集長）
YOSHIKUNI SHIRAI（SUSTAINABLE JAPAN MAGAZINE/EDITOR IN CHIEF）

地球温暖化や環境汚染などの問題に直面する私たちにとって、ESGとSDGsのことを考えずに、仕事や生活はできません。

この新聞の表紙の写真は、雑誌「ホールアースカタログ」の最終号（1974年発行）です。アップル創業者スティーブ・ジョブズがスタンフォード大学の卒業スピーチで、この雑誌の最終号に書かれていた「Stay Hungry. Stay Foolish.」という言葉を学生に贈ったことで近年、再び注目されました。この雑誌を作ったのはスチュアート・ブランドという編集者で、第一号は1968年に出版されました。その創刊号表紙には宇宙に浮かぶ青い地球の写真が使われています。

それは一般の人々が初めて目にする全地球の姿でした。彼は軍事機密のため非公開だった衛星画像の情報公開キャンペーンを行い、その結果、入手した写真を表紙に使ったのです。「私たちが自分たちの未来について真剣に考えるためには、全地球の姿を見て、そのイメージを人々が共有することが必要だ」と考えたからです。

そんな彼が影響を受けたのが、建築家で思想家のバックミンスター・フラーです。フラーはその生涯を通じ人類の生存を持続可能なものにするための方法を探り続けた人物です。著書「宇宙船地球号操縦マニュアル」では、有限な化石資源を消費し続けることに警鐘を鳴らし、風力・水力・太陽光から得られる自然エネルギーの活用の重要性を訴えました。

この毎月最終土曜日に発行する新聞では、ESG/SDGsを切り口に、日本発の食・建築・旅・芸術などの興味深い情報をお届けいたします。日常生活の中から持続可能な生活習慣や地球の未来のことを考える。そんなきっかけになる、紙面づくりを心掛けていきます。

The next issue will be published on July 24, 2021

The Sustainable Japan section of The Japan Times highlights the efforts of organizations and communities toward a new way of life. For more information on sustainability, ESG and SDG issues, see www.sustainable.japantimes.com

PHOTO: HIRAKU OGURA

When making sake or soy sauce, a type of fungus called *koji* is essential. The old method of steaming rice, adding koji and then stirring for several days is still practiced in many parts of Japan.

Feature | Fermentation 1

Japan's culture of fermentation teaches the wisdom of sustainability

Arina Tsukada is an editor, writer and curator, an explorer of new fields of the arts and sciences who founded the Whole Universe Association in 2018. With a diverse professional background, she has been editor-in-chief of the online art and science magazine Bound Baw since 2016. She continues to explore new worlds of possibility through an interdisciplinary approach. Using her multidisciplinary background in the arts and sciences, she has organized multiple conferences, exhibitions, media productions and other events. She is also the author of the 2018 book "Art Science Is" and co-author of the 2019 book "Information Umwelt: A Guidebook for Playing Between the Body and AI."

WRITER: ARINA TSUKADA TRANSLATION: EDAN CORKILL EDIT: JAMES KEATING

Japan's unique and diverse array of fermented foods, developed over more than a thousand years, has recently been attracting attention around the world. The Danish restaurant Noma, four times selected as the world's best restaurant, was quick to understand the importance of fermentation — so enthusiastic that it compiled years of research into "The Noma Guide to Fermentation." Chef Rene Redzepi, who is also active in the Danish environmental movement, has long stated that he was influenced by Japanese food culture and its roots in the local natural environment, and fermentation is a key part of that influence.

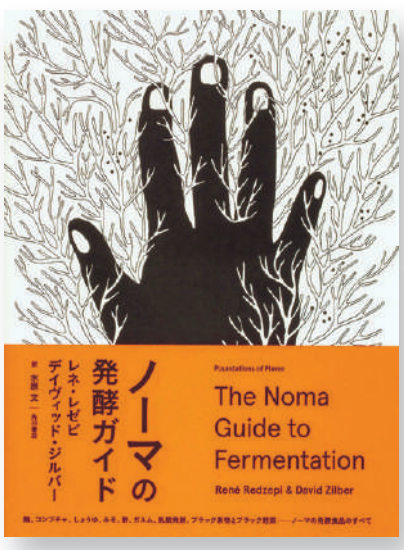
Japan's climate is hot and humid, and fermented foods were developed to be both tasty and long-lasting. In addition to sake and seasonings, uniquely evolved fermented foods are found throughout the country, such as *nare-zushi*, which is made by salting raw fish for more than six months. But the one that takes center stage in "The Noma Guide to Fermentation" is *koji*, an excellent fungus that is unique to Japan and that essentially created the foundations of Japanese cuisine, from sake to soy sauce, *mirin* rice wine, vinegar and miso. It takes on various tastes depending on how it is used, with meat and fish pickled in koji being tender and mellow in taste. The chemical reactions between the fungus and fresh ingredients will no doubt continue to delight the palates of innovative chefs and excite their curiosity for years to come.

As research on the human microbiome has progressed in recent years, it has also become clear that fermented foods can help improve the health of our intestines. It is believed that there are more than 100 trillion microorganisms in the human body, and when the living yeast and lactic acid bacteria from fermented foods are active in our intestines, our immune system becomes stronger and our metabolism improves. Hence fermented foods are also seen as important from the perspective of health.

But the benefits of fermentation go beyond taste and health. The knowledge and culture surrounding fermentation can also provide clues for creating sustainable societies for the future. Hiraku Ogura, the self-proclaimed "fermentation designer" who recently set off a boom in fermented foods in Japan, writes in his travelogue about fermented foods from around the country that fermentation is "a wisdom and culture that was created by our ancestors in a harsh natural environment." Methods of preserving food for lengthy periods naturally arose in areas where food resources were scarce. The delicate task of nurturing invisible microorganisms while keeping watch on temperature, humidity and the weather was perhaps another example of Japanese ingenuity stemming from constrained conditions. And it has minimal impact on the natural environment.

Fermentation even has applications beyond food. In Tokushima Prefecture, where plants are fermented to make indigo dyes, we may find clues leading to new dying methods that are not reliant on chemicals. In the Niigata Prefecture city of Nagaoka and elsewhere there have been experiments using microorganisms instead of chemical fertilizers to prepare soil.

In these special articles, we introduce regional initiatives, key people and restaurants making creative use of fermentation as we seek out hints for nurturing local economies through the environmentally friendly process of fermentation.



Left: "The Noma Guide to Fermentation" by Rene Redzepi and David Zilber. Fermented foods are used in all dishes served at Noma, a restaurant favored by Danish foodies. Right: Hiraku Ogura's "Fermentation Tourism Nippon," a book filled with know-how and recipes aimed at conveying the delights of fermented foods to the world.

● Summary

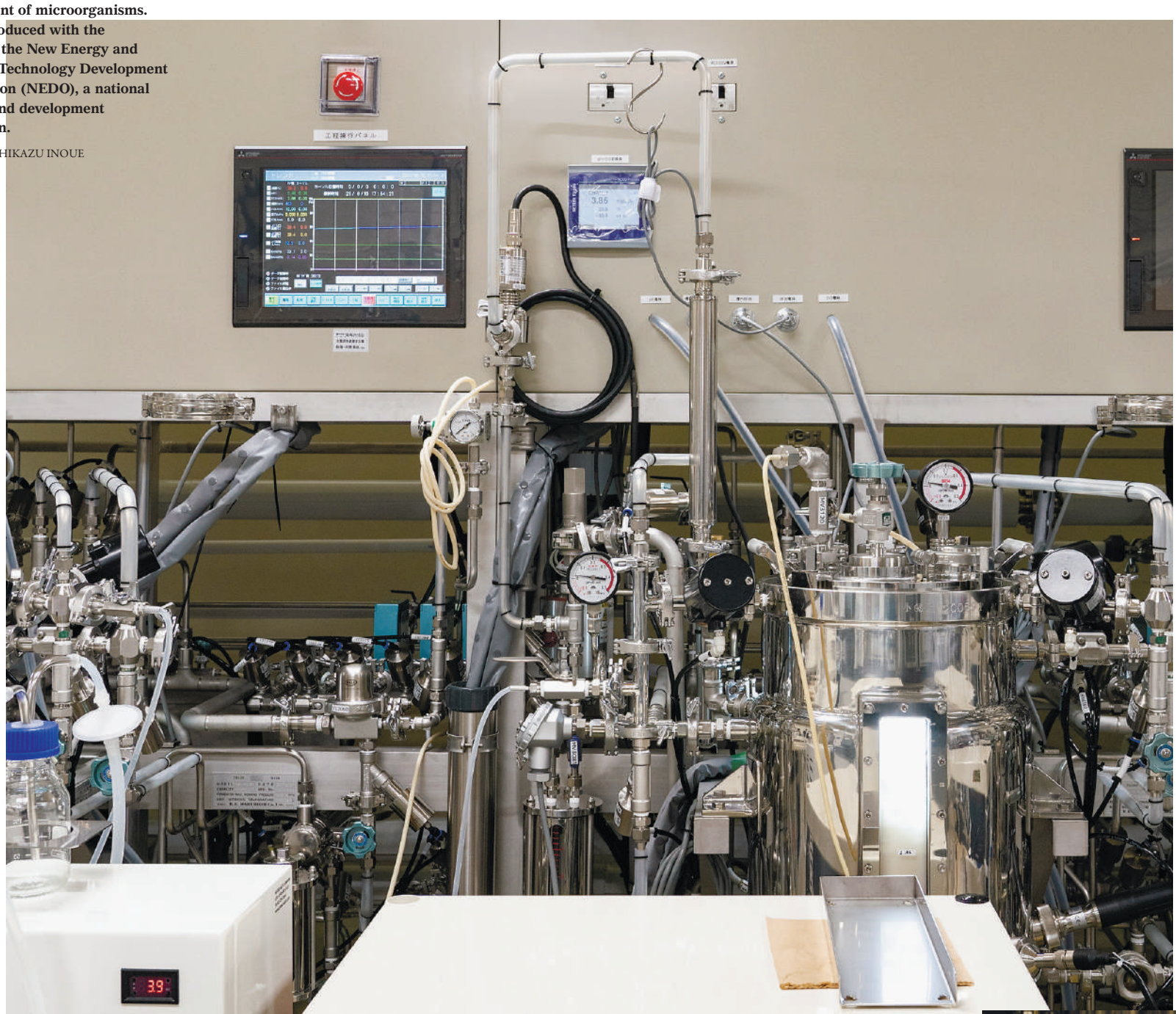
発酵文化が教えてくれる、
日本のサスティナブルな知恵。

いま日本の「発酵」が世界的に注目を集めている。「世界のベストレストラン50」で4年連続1位を獲得したデンマークのレストランNomaは『Nomaの発酵ガイド』を発行。日本の食文化に影響を受けたと公言しているが、その最たるものが発酵だという。高温多湿な日本では、食品を長持ちさせるため様々な発酵食品がつくられてきた。特にこの本で大きく取り上げているのが「麹」だ。日本でしか用いられない「麹菌」は、日本酒、醤油、みりん、酢、味噌まで日本食の基礎をつくってきた。

だが発酵の一番着目したい点は、その生産技術や文化背景に、サスティナブルな社会をつくる上で重要な知恵が詰まっていることだ。発酵の技術は食品以外にも広がっている。草木を発酵させ染料にする藍染め技術は化学染料に頼らない衣料生産のヒントがある。また発酵における微生物のはたらきを利用し、化学肥料の代替となる土壌づくりなどの研究開発が新潟県長岡市などで始まっている。

A large-scale cultivation device that acquires various data on the environment of microorganisms. It was introduced with the support of the New Energy and Industrial Technology Development Organization (NEDO), a national research and development corporation.

PHOTO: YOSHIKAZU INOUE



Feature Fermentation 2

Chitose Laboratory: Combining fermentation and AI for the food production of the future

WRITER: ARINA TSUKADA **TRANSLATION:** EDAN CORKILL **EDIT:** JAMES KEATING

In a cultivation device, microorganisms are activated through constant agitation of the liquid fermentation medium.

PHOTO: YOSHIKAZU INOUE

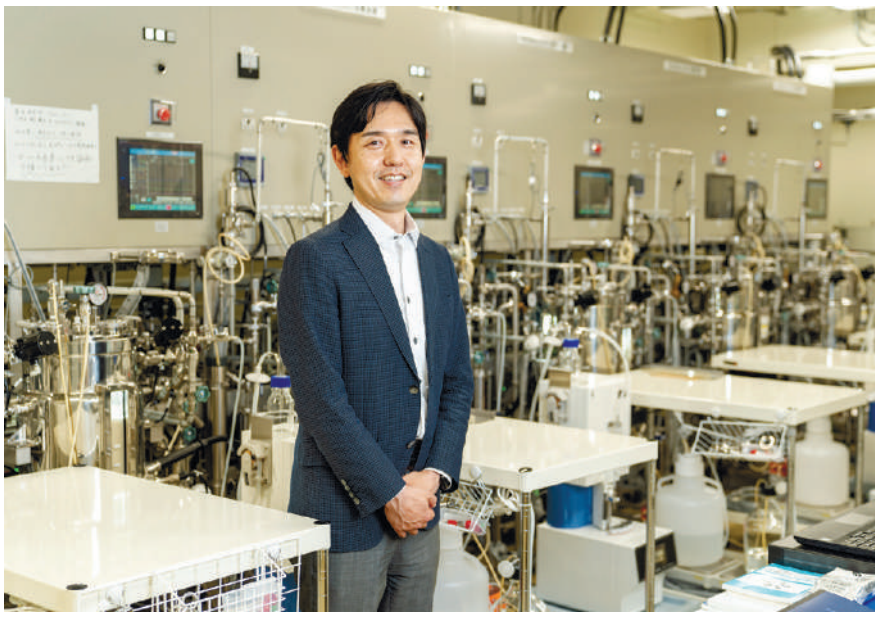


PHOTO: YOSHIKAZU INOUE

The world of fermentation remains shrouded in mystery, reliant largely on the experience and knowledge of "craftsman" fermenters. The biological mechanisms at work are little understood. Now a new research project is underway to produce high-quality bio-resources by letting artificial intelligence learn the mysteries of fermentation. We spoke with Ken Kasahara of the Chitose Laboratory Corp., which is serving as the hub for a project bringing together universities, companies and governments in Japan.

"Biotechnology is being developed all over the world, but Japan is considered a leader in the field of microbial cultivation. The context for this is the country's proud and diverse tradition of fermentation. And yet, just as the quality of wine or sake fluctuates year to year, fermentation will always vary depending on temperature and humidity. So a key task is to try to achieve stabilized production of bio-resources. One way of doing that is to let AI learn about the fermentation process by which microorganisms grow, and then analyze various data to understand the optimal conditions for growth."

If such cultivation technology research progresses, we may become able to produce petroleum-replacing fuels, resins, plastics and more — all from microorgan-

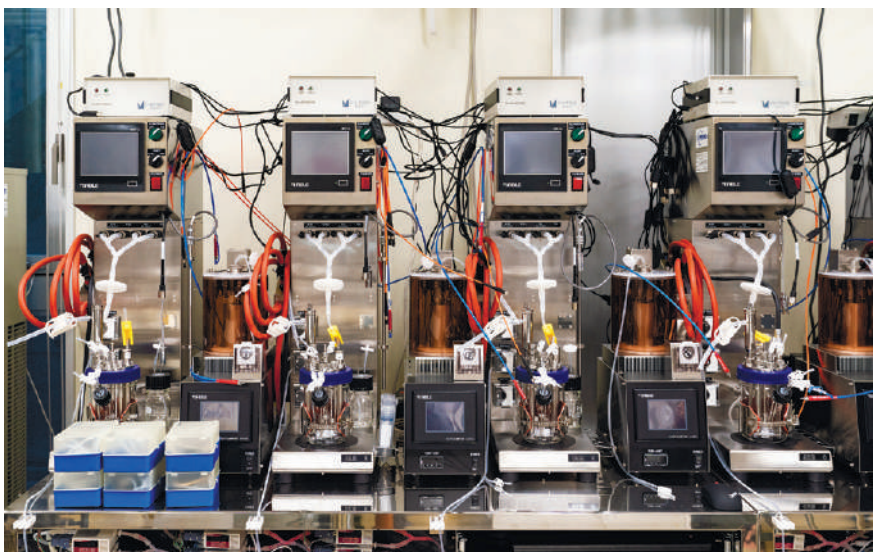
Ken Kasahara is an executive officer at Chitose Laboratory Corp., part of the Chitose Group of bio-venture companies. He also leads the bio-production management division at Chitose Bio Evolution Pte. Ltd., the leader of the group of companies promoting biotechnology development.

● **Summary**

発酵×AIで進む、
未来の食づくり。

発酵はつくり手の経験値、「職人の技」を頼りとしてきたため、その仕組みは解明されてこなかった。そんな発酵をAIに学習させデータ化、高品質なバイオ資源の開発を進める研究が始まっている。国内の大学、企業、行政が集うこの事業において、その中心を担う「ちとせ研究所」の笠原堅氏に話を聞いた。

「培養技術の研究が進めば、これまでの大量生産モデルとは異なる生産形態をつくることができます。着目するのが、少量多品種で高機能な発酵製品の開発です。今、代替肉が注目されていますが、多様なフレーバーの開発が始まっています。他にも、タンパク質含量が多いとされる藻類を食用品にする動きもあり、その培養に発酵技術を活かす研究を進めています。発酵は地産地消の文化です。大規模な生産拠点ではなく、拠点を各地に分散させ、その土地の風土にあった製品を小規模でくることが重要です。今後、AIの解析により効率的な技術を構築できれば、循環型経済の新たなモデルを提示することができます」。



A cultivation device that records various data on the environment in which microorganisms are cultivated. Microorganisms can be cultivated in a cycle of several days to one week, and data on temperature, humidity and odor are collected with various sensors for analysis.

PHOTO: YOSHIKAZU INOUE

isms. Kasahara adds that if we could further utilize the characteristics of fermentation, a form of production different from the current mass-production model could also be realized.

"I think the development of bio-derived energy and plastics will eventually become important, but if we tried to secure the current production volumes, we would need a lot of agricultural land," Kasahara said. "So we decided to focus on making small quantities of many varieties of fermented products. For example, meat substitutes have been attracting attention recently, and now we're seeing fermentation deployed in the development of flavors that might enhance those products. In addition, there is a movement to use algae, which are said to be high in protein, as food products, and we are conducting research to use fermentation in algae cultivation. Since there are limits to establishing large-scale production bases in terms of both funding and locations, it is important to spread production bases between regions and continue to make products suited to local climates at limited scale. Since fermented products are traditionally produced and consumed locally, that same approach can be applied to scientific or technological research. In addition, as people's tastes are diversifying, it is better to meet the needs of the world by making products according to the local tastes of each region rather than mass-producing them uniformly. I think if we can develop more efficient fermentation techniques as a result of this analysis, we will be able to present a new model of a circular economy to the world."

The bio-economy will transform the dinner tables of the future — and the key to the transformation may be research into Japanese fermentation.

In 2014, Kenta Watanabe opened the Awa ai brand Buaiso's studio in Brooklyn. This led to an increase in orders from overseas.

PHOTO: WATANABE'S

The concept of the company Watanabe's is "from field to closet." They even grow their own indigo. Harvesting the plants turns the hands bright blue.

PHOTO: WATANABE'S

Sustainable fashion born of fermentation: The renaissance of Awa ai, a traditional Tokushima craft

WRITER: ARINA TSUKADA **TRANSLATION:** CARRIE EDWARDS **EDIT:** JAMES KEATING

Japan, with its four distinct seasons, has seen the development of techniques for year-round use of plants harvested in summer and autumn — not only for food, but also for making textiles and clothing. The dye Awa *ai*, an important traditional Tokushima Prefecture craft named for the feudal Awa clan, is produced with a unique method in which indigo plants harvested in summer are transformed into clothing dye through long fermentation.

While indigo dyeing cultures exist around the world, many in hot, humid regions such as India cultivate the plants throughout the year and produce the dye in a process that takes about 10 days. In contrast, the process of making Awa ai involves long fermentation, taking a full year.

Kenta Watanabe of the company Watanabe's, which is newly spreading the word about Awa ai, is one of those who became enthralled by this culture of fermentation.

"I used to work in the middle of Tokyo. One day I went to an indigo dyeing workshop, and seeing my own hands dyed bright blue sent a shock wave through me. I decided this was what I had to do. So about 10 years ago, I knocked on the door of an *aishi* (indigo artisan) who makes Awa ai in Tokushima."

Watanabe says he was particularly interested in how fermentation is used in the production process.

"After drying the indigo leaves that are picked in summer, we first make what's called *sukumo* — the basic dye material. Then we spread the leaves on a dirt floor, sprinkle them with water and aerate them, and start the heat fermentation process. This is repeated more than 20 times over a four-month period, to concentrate the color. We're working with indigo all year round. If you produce good leaves, you can see the difference in the color. Every day there's something to enjoy."

Awa ai is the result of this long process — but the number of people practicing the technique of making sukumo from fermented natural indigo has decreased year by year. It is said that at one point there were only five such enterprises in all of Tokushima Prefecture. Currently just two places in the prefecture carry out the entire process from making sukumo to dyeing fabric to producing and selling clothing: Watanabe's and the brand Buaisou.

"Currently our company does every part of the clothing production process, from cultivating indigo leaves and processing them to make sukumo ... to dyeing, to making and selling clothes, so we can avoid unnecessary costs and sell our products at reasonable prices," Watanabe said. "Right now I feel like there's a perfect balance between our production scale and our brand's philosophy. Over the past few years, there's also been a shift in thinking, and I have a strong feeling that more consumers are interested in brands like ours that take a sustainable approach."

While the fashion industry has long produced huge amounts of clothing for each season, more people have been calling for a re-evaluation toward sustainable practices. The reasonably scaled production process that Watanabe describes may also be a good fit with the world of fermentation, which cannot be controlled by human hands alone. "I feel that I'm always engaging with non-human things, like invisible bacteria and plants," he said. "All that humans can do is make preparations and create the right setting. Understanding the natural environment is the key factor in continuing to make things of quality."

Watanabe's develops products like indigo-dyed shirts and jeans in-house, and also collaborates with fashion enterprises.

PHOTO: WATANABE'S

Summary

発酵から生まれる
サスティナブルな「阿波藍」。

徳島県を代表する伝統工芸「阿波藍」は、夏に採取された藍を長期間発酵させて染料に仕上げる独自の染め文化だ。世界中に藍染め文化は存在するが、多くはインド藍などのように高温多湿な国で藍を年中栽培して10日程度で染料にする。一方、阿波藍は二度にわたる発酵を重ねて、丸1年をかけて染料をつくりだす。阿波藍ブランドを発信する「Watanabe's」の渡邊健太氏は、この発酵文化に魅せられた一人だ。

天然藍を発酵させた「すくも」をつくる技術の担い手は年々減少しているが、この「すくも」づくりから染色、衣服の生産と販売までを一貫して行うのが渡邊氏のブランドだ。

「自社で生産した商品を直接クライアント企業や消費者に届けることができるので、無駄なコストをかけず適正価格で販売できる。また自分たちが無理をしない程度の生産量を保つことは、土地の環境保全にもつながります。生産規模とブランドの持つ価値観とのバランスが、いまちょうど合っていると感じますね」。

Leaders & Readers

Building a global Panasonic compliance network

Patient and persistent, Laurence Bates navigates complex laws and policies

WRITER: JOE MUNTAL

PHOTO: HIROMICHI MATONO

Laurence Bates is managing executive officer, general counsel and member of the board of directors for Panasonic Corp., positions he assumed when he joined the multinational electronics company in 2018. Having formerly worked at General Electric Japan and Lixil Group Corp., Bates has provided legal counsel to major business entities in Japan for nearly three decades. In 2013 he served as president of the American Chamber of Commerce in Japan. He has also engaged with the Japan-based Lawyers for LGBT & Allies Network to promote marriage equality in Japan, the only country in the G7 that does not fully recognize same-sex partnerships. In his free time, Bates enjoys photography and perusing antique markets for Japanese ceramics. An avid traveler, he has used the COVID-19 international travel bans as an opportunity to explore new areas of Japan, including Shiretoko Peninsula in the easternmost portion of Hokkaido, with his husband and two children.

For nearly three decades, Laurence Bates has provided legal counsel to some of the largest business entities in Japan. Following positions at General Electric and Lixil Group Corp., he now serves as managing executive officer, general counsel, chief risk management officer and chief compliance officer for Panasonic Corp., where he is drawing from his vast experience to build a globally interconnected compliance framework.

Bates is fluent in Mandarin Chinese and Japanese, and his specialized skill set has enabled him to become a leading expert in compliance in Asia. As an undergraduate at Yale University, he majored in both Chinese studies and economics, and later received his JD from Harvard Law School. By the time he entered Harvard, he had set himself on a career path toward the legal profession, but it was his fascination with China that initially propelled him.

Bates first became interested in China in junior high school, when he witnessed President Richard Nixon visit the People's Republic of China in 1972. It was the first visit by a U.S. president to the PRC, and the historic moment left an indelible mark on Bates. "It was just so incredibly eye-opening for me to watch at that age," Bates told The Japan Times from Panasonic's offices in Tokyo Midtown Hibiya. "I somehow determined that I was going to go to a university where I could major in Chinese studies and which would enable me to see the world. In those days, it was a little unusual to pursue that kind of a major, so I balanced it with a more traditional degree in economics."

Bates was also exposed to Japan from an early age through his father, a career Coast Guard officer who spent time in Hokkaido around the time when Bates was born. Bates grew up hearing stories about Japan from his father, and his family invited Japanese exchange students to stay with them when he was in high school. Bates formally started studying Japanese during his first year in law school but, knowing how difficult it is to achieve language proficiency, based on his experiences studying Chinese, decided to take a year off to come to Japan and study at the Inter-University Center for Japanese Language Studies in Kanagawa Prefecture.

After finishing law school and being admitted to the New York Bar in 1987, Bates worked at law firms in the U.S., China and Japan over the course of around five years. At the time, he had not considered career alternatives to being a lawyer at a law firm, but that changed when a highly publicized scandal involving a GE subsidiary in Japan found its way to Bates through a phone call from a recruiter.

The GE subsidiary in question was Yokogawa Medical, employees of which had been accused of bribing university professors to win orders of medical testing equipment. The scandal had prompted GE to search for someone who would look after the medical systems business throughout Asia, and this search led them to Bates. "I had no idea that this would somehow be connected to me," Bates said, "but the opportunity brought together my Chinese and Japanese experience for the first time in my career. It just sounded incredibly exciting to be close to business and able to actually build a legal and compliance culture."

Bates explained that a major difference between an in-house lawyer and a lawyer at a law firm is their proximity to business decisions. Whereas lawyers at law firms are generally remote from actual decision-making and are subject to limitations related to costs and scope, in-house lawyers are part of a business organization, which enables them to build "from the inside out."

This notion of "building" is something Bates has focused on throughout his career. For example, while working for GE's medical systems business, he assembled a team of around 20 lawyers based in several countries throughout Asia. "To build that kind of team with a global mindset that can create the type of culture that's necessary to achieve compliance goals is my objective," he said, "and that is what I'm fundamentally working on at Panasonic."

Compliance encompasses a wide spectrum of risk areas, such as competition law, trade controls, data privacy regimes and environmental regulation. Panasonic has a dedicated group for environmental affairs, and as general counsel, Bates maintains visibility with his team to all potential legal and compliance risks. "It's never perfect; it's an ongoing, evolving aspiration," he said, "and environmental regulation is an example of one regulation area that needs to be complied with."

Bates pointed to two concepts that have been significant throughout his career: patience and persistence. He noted that they are especially important in Japan.

"'Patience' and 'persistence' are two words I've had to keep in mind when conducting business in Japan," he said. "It takes more time than first meets the eye to build consensus, especially on the complex issues I engage in all the time. You have to recognize that it takes a vision that needs to be persistently pursued, and a certain amount of patience and time horizon to achieve that vision. Sometimes, although we want to move a lot faster — and everybody agrees with that — we need to make sure we move fast in an intelligent way."

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Name: Laurence Bates
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Years in Japan: 30

PHOTO: JUNYA IGARASHI

Having done two years of postgraduate research into fermentation at the Tokyo University of Agriculture, Ogura became a self-proclaimed "fermentation designer," traveling around Japan to talk about fermentation, planning products and doing other PR, writing and lectures. In 2020, he opened Fermentation Department in the Shimokitazawa area of Tokyo.

PHOTO: JUNYA IGARASHI

"Fermentation designer" Hiraku Ogura's shop and restaurant Hakko Department is located in the community-based commercial facility Bonus Track in the Shimokitazawa area of Tokyo.

Feature Fermentation 4

'Fermentation designer' Hiraku Ogura on the future of food culture

WRITER: ARINA TSUKADA **TRANSLATION:** EDAN CORKILL **EDIT:** JAMES KEATING

"Fermented foods have preserved local landscapes."

So says Hiraku Ogura, the self-proclaimed "fermentation designer" who sings the praises of fermentation both at home and abroad. Originally an art director, he first became acquainted with the world of microorganisms after doing a design job for a maker of fermented drinks. Since then he has published books such as "Fermental Cultural Anthropology" and "Fermentation Tourism Nippon" that set off a boom in fermented foods in Japan, and in 2020 he opened Hakko Department, a shop and restaurant in Shimokitazawa that specializes in fermented foods from around the country. Ogura, an expert in modern Japanese fermentation culture, calls fermentation "a sustainable cultural mechanism that has continued for 1,300 years."

According to Ogura, there are three reasons for this longevity. The first is that the culture of fermenting things is deeply connected to local ecosystems. "The primary ingredients in fermented foods are always the locally occurring produce. If most modern manufacturers have tended to exploit the resources of the land, fermentation is the opposite. For example, to produce the rice that is fermented to make sake or soy sauce, the quality of the local soil and water are crucial. Likewise, with sake brewing, you can't just relocate a sake brewery to a new location, because of the countless bacteria that live within its distilleries. To make a popular sake you actually have to contribute to the agriculture and environment of the local area. Recently, organic rice is more highly valued than regular rice, and so production methods not reliant on chemical fertilizers are required. The same is true for vineyards: In regions where the people practice fermentation there will be less fallow land and the landscape will be better preserved. Fermentation is the result of repeated efforts to make the best, most sustainable use of an area's resources."

The second factor is the "upcycle" nature of fermentation. "Decomposition and fermentation are closely related, but fermentation uses the action of microorganisms to transform something that would otherwise be harmful to humans into something useful. For example, there is a popular deodorant called Kie~ru (https://kankyo-daizen.jp/) that actually came out of an attempt to solve a problem faced by livestock farmers. By chance, this 100 percent natural deodorant emerged as a derivative of a process involving the use of lactic acid bacteria to purify the harmful substances coming from livestock urine in Hokkaido. Fermentation techniques using the power of natural cycles like this could well be utilized in other fields as well."

The last important point is fermentation's deep connection with food culture, which is inherently accessible to all. "Fermentation has deep historical and philosophical connections to the land, but at the same time it is also relatable through the simple word 'delicious!' At my shop, some people are attracted to the philosophical element of fermentation and they buy books, but there are also many locals of all ages who come by to pick up their daily soy sauce or miso. Through the shop, I can communicate with men and women of all ages without going into the philosophy or aesthetics. When you think about it, a lot of the human rights or environmental issues now considered sustainable development goals have become difficult to discuss without a certain level of literacy and education. But with fermentation it all comes back to that physiological sense of being good to eat. And then there are the vernacular tastes that evolved independently in each region. This idea of being able to 'participate' in fermentation regardless of your level of understanding is another reason it has continued for so long as a culture. And that's why it's lasted for more than 1,300 years."

Nowadays in Japan, the number of young fermenters of Ogura's generation is increasing. As they explore this ancient food culture that has coexisted with the natural ecosystem for over a thousand years, they will continue to innovate, and the cultural scene surrounding fermentation will thrive and become even more interesting in the future.

From left: *Tamari shōyū* is a gluten-free soy sauce that has no flour. It is characterized by a rich sweet-and-sour taste and is also excellent when sprinkled on steak.
***Rakkyō tamarizuke* pickled leeks, with a fine balance of umami and acidity, are the perfect accompaniment to orange wine.**
Gonin Musume, from Terada Honke, is a sparkling sake made by fermenting brown rice with lactic acid microbes. It can be enjoyed like natural wine and has a complex and slightly acidic taste.
***Kōji* miso is a miso with an uncanny cheese-like flavor. It can be added to pasta sauce or enjoyed with cheese and is great with red wine.**
***Nigori su* is an unrefined vinegar made from rice that brings out flavors without the need for salt. It is great for those wanting to reduce their salt intake.**

PHOTO: JUNYA IGARASHI

● **Summary**

発酵デザイナーが語る、
発酵文化のこれから。

「発酵食品は地域の景観を守り続けている」と、発酵デザイナーの小倉ヒラク氏。『発酵文化人類学』『日本発酵紀行』を出版し、2020年には発酵食材を集めた「発酵デパートメント」を東京・下北沢にオープン。現代日本の発酵文化に精通する彼は「発酵とは1300年続くサスティナブルな文化装置」と語る。

小倉氏によれば、そのポイントは３つある。１.土地の生態系と深く結びついていること。「発酵文化が栄えた地域ほど、耕作放棄地が少なく、景観が守られ続けています」。２.発酵の持つアップサイクルの性質。「微生物の働きで有益なものに還元するのが発酵技術。例えば消臭剤「KIE~RU」。これは畜産農家の悩みを解決する過程で生まれた、家畜のし尿から出る有害物質を乳酸菌の力で浄水処理する技術を応用したものです」。

３つめのポイントは、誰にでも開かれた食文化と言う点だ。「『おいしい！』という一言で人と人がつながることができる。地域の文化・コミュニティを育み、継続、発展できます」。

ESG Talk

Climate policy and SDGs inseparable: expert Takeuchi

WRITER: TOMOKO KAICHI

PHOTO: HIROMICHI MATONO

Sumiko Takeuchi, senior fellow and member of the board of directors at the International Environment and Economy Institute.

Japan has pledged to achieve carbon neutrality, which obliges the country to reduce emissions of greenhouse gases to net zero, by 2050. Sumiko Takeuchi, an expert on energy and environmental issues, welcomes the move but points out that energy reforms will bring drastic changes to society that will include pain and burdens. For this reason, she argues, the government needs to work to make the public understand the full significance of its vision and persistently commit to fleshing out a road map for the long road to a decarbonized society.

What will it take to realize a decarbonized society? Actually, the bulk of what are called greenhouse gases is the carbon dioxide discharged into the atmosphere when fossil fuels are burned. Therefore, "The climate change problem is not an environmental problem — it's an energy issue, and it's an economic problem," Takeuchi said. About one-fourth of the amount of energy consumed in Japan takes the form of electricity, but the remainder is obtained directly from the burning of fossil fuels such as gasoline and heavy oil. As electricity can be generated without discharging carbon dioxide if it is made from nuclear or renewable energy sources such as sunlight and wind, the promotion of electrification is widely believed to be the path to decarbonization. For this, the greater use of renewable energy is key.

Japan has sometimes been described as a "developing country" in terms of introducing renewable energy, but Takeuchi disputes this view. Japan ranks first in the world in terms of solar power introduced per unit of land area, and third in terms of the absolute amount of solar power introduced, after China and the United States, whose land areas are larger than Japan's.

However, subsidies to promote renewable energy have snowballed to ¥2.7 trillion ($24.8 billion) annually because of a "sloppy" subsidy policy focused on prioritizing a greater use of renewable energy, according to Takeuchi. If the government is to continue to promote renewable energy, it "needs to proceed prudently (on promoting) the installing of solar panels on building roofs, for example," she said.

In the field of offshore wind power, which is fast being introduced in Europe, the Japanese government must also work to promote research and development on floating wind turbines and install them, keeping in mind Japan's wind conditions and submarine topography. "Renewable energy is restricted by natural conditions (at each location), and so if you just try to repeat what is done overseas, it doesn't always work," Takeuchi said. "But Japan aims to promote technological development and creation of industries so that it can contribute to the decarbonization of Asia and other parts of the world."

Electricity is unique among the forms of energy. "Energy infrastructure is a lifeline, and power infrastructure, in particular, is the infrastructure of infrastructures," Takeuchi said. "That's because it supports other infrastructures, such as transportation and communication infrastructures."

Electricity cannot now be stored in sufficiently large quantities, so for a renewable power source to be viable, it must have the ability to generate enough power at the moment it is needed. The right balance between demand and supply has to be maintained. Renewable power sources require the use of thermal power and storage batteries to compensate for any shortfall in supply.

"Japan is not small in terms of scale for the entire nation, but it has multiple bottlenecks in regions due to the weakness in cross-regional transmission grids as well as the difference in frequencies," Takeuchi said. "There's a high hurdle of having to increase renewable energy's share while maintaining stable supply." The European Union countries have an overwhelming advantage in terms of flexibility in mutually supplying surplus power because neighboring countries are connected with each other by land.

It is natural that energy policies should reflect their respective regional features, and for this reason the 17 U.N. sustainable development goals (SDGs) are differently prioritized for different regions, according to Takeuchi. Climate change is not the only issue for Japan's energy industry. The country faces the need to take measures to address the fast-progressing problems of declining population and regional depopulation. It must also promote conversion to renewable energy sources while accelerating digitalization. That calls for major innovation. The Japanese government thus has stepped up efforts to stimulate innovation. It has, for example, established a ¥2 trillion fund to stimulate research and development spending by private-sector businesses.

Since the oil crises of the 1970s, Japan has spent taxpayer money on research and development for renewable energy. As a result, Japanese manufacturers came to have the largest share of the global market for solar power products in the early 2000s. However, their technologies saw a rapid uptake and they quickly lost out to newly emerged Chinese and Taiwanese rivals, which were capable of manufacturing in large quantities at low cost. Thereafter, Japanese makers were no match for these rivals, which were capable of manufacturing in large quantities at low cost. In order for Japanese manufacturers to avoid a similar fate now, they "must thoroughly reduce costs so that they can stay competitive in the phase where their technologies become imitated, not just in their technology level," Takeuchi said. "They must establish a position where they lead in the moves to promote new technologies."

"I'm hoping technological development will be carried out in a strategic way to help protect employment in Japan," she said.

At April's Leaders Summit on Climate, the Japanese government announced that it aims to reduce its 2030 emissions by 46% from the levels in fiscal 2013, which ended in March 2014. Takeuchi said halving emissions over nine years is a tall order, and will very likely lead Japan to turn to nuclear power. If the government ends up deciding to use nuclear power after weighing its risks against those presented by global warming, it then must try to convince the public on that decision, Takeuchi said.

She also said the government must address falling employment in the automotive and oil-related industries, plus potential rises in energy prices and their impact on low-income households — issues likely to crop up in the transition phase to renewable energy. "Unless pains and negative aspects are openly discussed, it wouldn't be fair and policies would not last long," she said.

The problems the world now faces are wide-ranging. Some people argue that climate change measures should have utmost priority, as advocated by the European countries and the U.S., but Takeuchi said this view does not sit comfortably with her. That is because it can fail to take national and regional characteristics into consideration, leading discussions to deviate from reality. Such a way of thinking undeniably demonstrates a lack of tolerance for giving breathing room to countries that have more difficult conditions, such as developing countries that are experiencing difficulty in satisfying their demand for energy. "I think it's important to discuss the climate change issue as one of the SDGs and seek solutions while trying to strike the right balance" among the 17 goals, Takeuchi said. "If a policy or initiative deviates from reality, you can't call it sustainable."

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Feature | Fermentation 5

The forefront of the bio-economy: Nagaoka tries revitalizing local regions by promoting fermentation

WRITER: ARINA TSUKADA TRANSLATION: EDAN CORKILL EDIT: JAMES KEATING

Above: Fermentation Trip, an event that brought together the fermentation culture of Nagaoka, was hosted at the Kengo Kuma-designed Nagaoka city community space Aore Nagaoka and attracted more than 5,000 visitors in a single day.

PHOTO: MARIKO WATANABE

Below: At Settaya 6th Avenue Fermentation Museum, a renovated sake brewery first founded in 1887, you can learn about the culture of fermentation in the Nagaoka area.

PHOTO: NAGAOKA CITY

The key to achieving a sustainable society these days, some believe, is the "bio-economy," a new economic cycle drawing on renewable biomass as a source of energy and biotechnology. And yet in Japan, the traditions of fermentation, by which living organisms are made to feed local economies, has existed for generations. Might it be possible to combine the power of fermentation and science to achieve regional revitalization?

The city of Nagaoka in Niigata Prefecture, which is one of Japan's leading rice-producing regions, was one of the first to explore this potential. Nagaoka is not only the birthplace of the famous rice brand Koshihikari, but it also boasts 16 sake breweries, the second-most of any city in Japan. And it was in Nagaoka that the Nagaoka Bio-Economy Concept was launched with the aim of adapting scientific thinking to fermentation. We spoke with professor Wataru Ogasawara of Nagaoka University of Technology, a proponent of the project and a longtime researcher into fermentation.

"It is thought that 99% of the world's microorganisms are still unknown to humans. We're also told that eating fermented foods is good for you, but the truth is we don't actually understand why that is. It is thought that were we to solve the mystery of an additional 10% of microorganisms, then we could change the world."

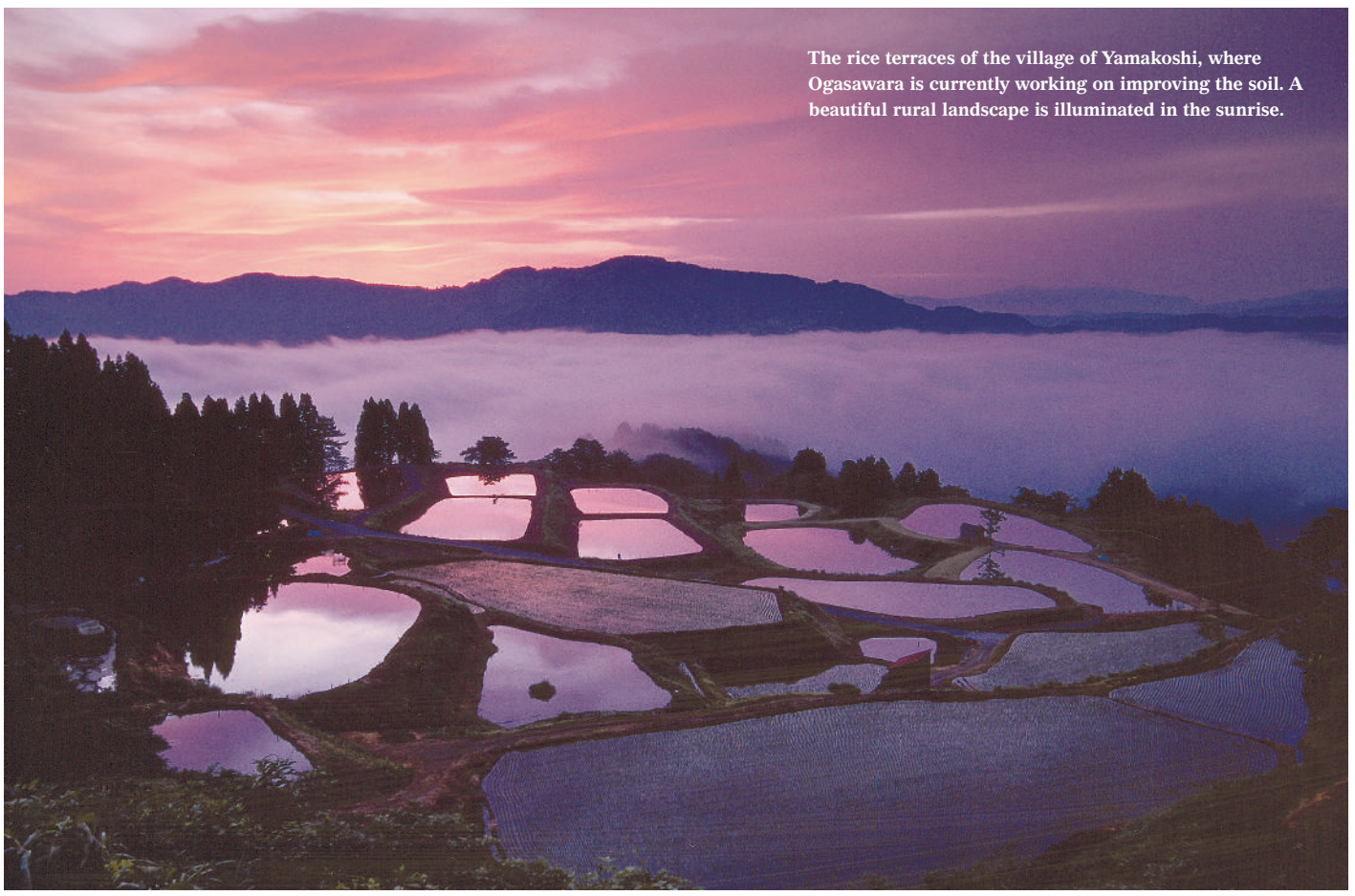
Fermentation techniques tend to be practiced largely at the whim of their creators, and there are many aspects of the fungi's activity that we don't understand. Efforts are now underway to conduct research into fermentation to address this situation and contribute to the realization of a resource-recycling society.

"Currently the focus of our attention is on improving the soil in rice fields. We are doing research to activate microorganisms so we can produce organic fertilizers that will be an alternative to chemical fertilizers and pesticides. Using chemical fertilizers allows for stabilization of production, but at the cost of damage to the soil. And yet we can't just stop using pesticides because insect damage would increase. We believe that if the microbial environment suited to the local environment is prepared properly, then production would be possible without taxing the natural environment. Experiments using rice fields in Nagaoka city and neighboring Yamakoshi village have already begun," Ogasawara said.

At the same time, Japan's rice consumption is decreasing, and, with the influence of coronavirus in 2020, some 2 million tons of rice went to waste. The government has implemented policies aimed at reducing stockpiles, but the issue of what to do with the surplus rice is problematic nationwide. "One thing that can be done is to use the waste material from the rice to make organic fertilizers or create new processed products through fermentation. Sake and seasonings were first developed as a means to make effective use of stored rice, and rice cracker and rice-based sweet production is also popular in Niigata Prefecture. Research is also underway to make edible oil using rice yeast, and to make processed rice products that require little sugar — with the aim of promoting healthy Japanese cuisine."

Nagaoka and Ogasawara are also playing a role in promoting these kinds of activities to locals. They have held events like Fermentation Trip, in which locals and tourists experience fermentation culture together, and in 2020 a museum dedicated to fermentation opened in a 100-year-old converted sake brewery. Combining a cafe where you can taste local fermented foods and a lab where you can learn about fermentation, the museum has quickly become a new tourist attraction. Meanwhile, the Fermentation Science Contest for teens was held nationwide in order to encourage scientific approaches to fermentation, a reappraisal of the fermentation culture of Nagaoka and other regions and also to spur the development of new products. If these efforts spread nationwide, fermentation could become the key to revitalizing Japan's regional areas.

Wataru Ogasawara, a professor at Nagaoka University of Technology, is a specialist in fermentation. He has appeared in domestic and international media and is active in academic societies. His lab and community space will open within Hakko Museum Yonezo this summer.



The rice terraces of the village of Yamakoshi, where Ogasawara is currently working on improving the soil. A beautiful rural landscape is illuminated in the sunrise.

PHOTO: NAGAOKA CITY

Summary

バイオエコノミー最前線、発酵で地域を活性化する。

再生可能なバイオマスやバイオテクノロジーを活用して新たな経済循環を生み出す「バイオエコノミー」が注目されている。発酵×科学で、地域経済を活性化する新潟県長岡市の取り組み「長岡バイオエコノミー構想」を紹介したい。長岡市は「コシヒカリ」発祥の地であり、全国2位・計16ヶ所もの日本酒の蔵を有する「醸造のまち」でもある。取り組みの推進者で長岡技術科学大学の小笠原渉氏に話を聞いた。

「いま注力しているのは水田の土壌改善です。化学肥料や農薬の代替手段として、微生物を活性化させ有機肥料をつくりだす研究をしています。実証実験も始まっています」。

余剰米の活用も課題だ。「発酵を用いた加工品や、コメ原料の酵母で食用油をつくる計画、糖質制限したコメ加工品の研究が進んでいます」。この動きを知らせるため長岡市と小笠原氏らは、発酵文化を楽しむイベント「発酵Trip」や、2020年には「摂田屋6番街・発酵ミュージアム米蔵」をオープンさせた。

The front page of The Japan Times on Oct. 11, 1964

Oct. 24, 1964: The Japan Times' front page after the Japanese women's volleyball team beat the Soviets to take the gold

Yoshinori Sakai lights up the cauldron marking the start of the 1964 Tokyo Olympics. PHOTO: Kyodo

Olympic special

Oct. 23, 1964: The Olympic day that redefined Japan

WRITER: ROY TOMIZAWA SPORTS JOURNALIST

He climbed the steps with the Olympic torch in his right hand, the torch's base at shoulder height and the cylinder sparking reddish-white and spewing smoke. Twenty steps. Forty steps. Sixty steps.

Yoshinori Sakai held an even pace as he jogged up the stairway to the top of the National Stadium. A hundred forty steps. A hundred sixty steps.

And finally, after climbing the equivalent of an eight-story building, with nary a slip or stumble, Sakai stood next to a large black cauldron, faced the crowd and cracked a huge smile.

Was it relief at making it to the top without a spill? Was it exhilaration upon seeing the field filled with over 5,000 athletes from 93 nations and the stadium with over 70,000 cheering spectators, including the emperor of Japan?

Certainly, those were two of the many feelings all of Japan felt that beautiful autumn afternoon on Oct. 10, 1964, when Japan welcomed the world to the XVIII Olympiad.

Sakai, who was born in Hiroshima on the day the atomic bomb was dropped, had just done what Japan had done: symbolically climbed a mountain.

Regaining confidence

At the end of World War II, Japan had been a defeated, occupied nation in ruins. And yet, in only 19 years, the nation recovered its economy, its standing in the world and its confidence so quickly that it could pull off the most logistically complex peacetime global event at the time, the Summer Olympics.

Memories of poverty, disease and despair were still fresh in the minds of Japanese adults. With great anticipation they worked hard to organize the games, transform the city and ensure a warm welcome for their guests from far and wide. With great concern they worried they would be revealed as a people who could not compete with the rest of the world.

That trying ambivalence bubbled to the surface on the penultimate day of the Tokyo Olympics.

Resignation in the air

It was Friday, Oct. 23, 1964. The Nippon Budokan was packed. But resignation wafted in the air of this newly constructed arena of the martial arts.

Even though Japanese judoka Takehide Nakatani, Isao Okano and Isao Inokuma had already taken gold in the first three weight classes the previous three days, there was considerable doubt that Japanese champion Akio Kaminaga could defeat Dutchman Anton Geesink in the open category.

After all, Geesink had shocked the judo world by becoming the first non-Japanese to win the world championships in 1961. More relevantly, Geesink had already defeated Kaminaga in a preliminary bout. So while the Japanese in the Budokan, including Crown Prince Akihito and Princess Michiko, were hoping Kaminaga would exceed expectations, all they had to do was see the two judoka stand next to each other to worry — the 2-meter-tall, 120-kg Dutch giant versus the 1.8-meter, 102-kg Japanese.

Even though judo purists say skill, balance and coordination are more important to winning than size, deep down many Japanese likely felt that the bigger, stronger foreigner was going to win. After all, the bigger, stronger Allied soldiers had defeated Japan in the Pacific War.

And so Geesink did, defeating Kaminaga handily, sending the nation into a funk.

Two-time Olympic swimmer Ada Kok, invited to the match after winning a silver medal for the Dutch team, was a witness. "I realized I was watching a culture shock of sorts, going throughout Japan," she said. "The Budokan was silent. Quiet. I could hear people crying."

The 'Witches of the Orient'

That was late in the afternoon. About 13 kilometers to the southwest, the Japanese women's volleyball team was preparing for their finals at the Komazawa Indoor Ball Sports Field. They too were going up against bigger, stronger adversaries: the USSR.

This time, though, there was a sense that Japan could defeat the Soviets — they had previously done so at the world championships in 1962 in Moscow. So when nearly every citizen in Japan had settled in front of their television at 7 p.m., with nearly every channel carrying the match, the entire country was in extreme anticipation.

Geesink had just sunk Kaminaga, as well as Japan's hopes of sweeping gold in the only Olympic sport native to Japan. "Maybe we just aren't big enough or strong enough," many may have thought.

Hirobumi Daimatsu, coach of the women's volleyball team, had worked over the years to train his players to compensate for a relative lack of size and strength through speed, technique and guts.

And much to the relief of the Japanese nation, the famed "Witches of the Orient" defeated the Soviet Union in straight sets: 15-11, 15-8 and, in a tantalizingly close final set, 15-13.

The team of diminutive Japanese, taking down the larger Soviet women, showed the world they were from a nation to be recognized and respected. Whatever sting lingered from Kaminaga's loss, whatever shame from the wartime defeat — all negativity evaporated the moment the ball fell to the ground in the match's final point. A nation lept in unison.

Rock bottom to soaring peak

When looking back on 1964, a monumental milestone in the history of Japan, you must also look farther back to the start of Japan's arduous journey. Without the rock bottom of 1945, there is no soaring peak of 1964.

And on Oct. 23, 1964, there was no moment more euphoric than the day the Japanese women's volleyball team carried a nation to the top of the highest mountain.

On that day, Japan was a nation reborn — young and confident — celebrated by the world.

This article was published on May 3 at The Japan Times

PHOTO: ROY TOMIZAWA

Roy Tomizawa with Olympic athletes on Nov. 6, 2019. From left: Ed Ferry, rowing '64; Kent Mitchell, rowing '60, '64; Charles Altekruse, rowing '80, '88; Anne Cribbs, swimming '60; Dan Drown, water polo '64; Billy Mills, track '64; and Andy Toro, canoe '60, '64, '72, '76.