SEKKA · STOWE, VERMONT

The Snow Lord



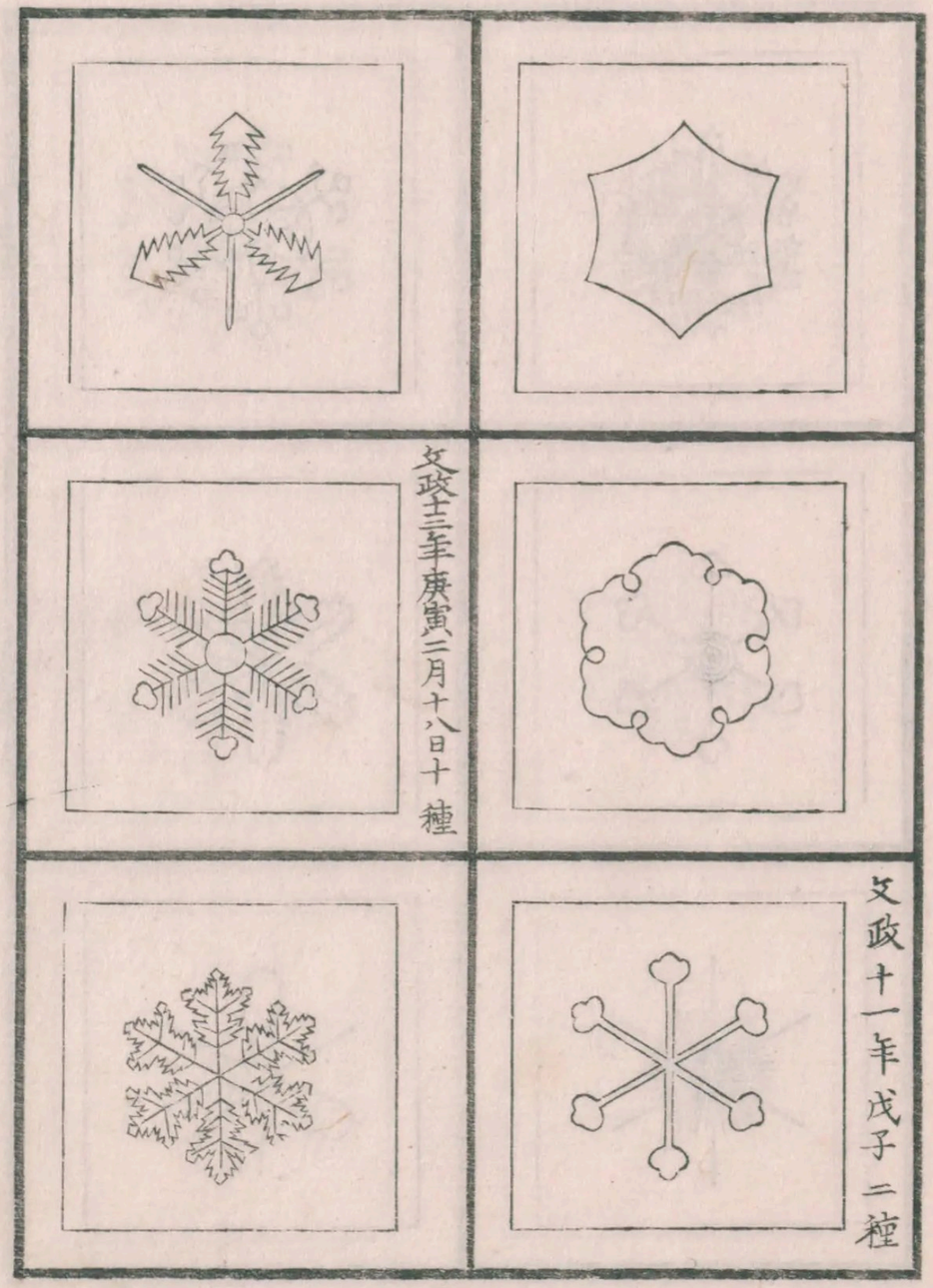
Closed, and open at the opening of Ōi Moyō. A computer-made mock-up of the printed book; the pages that follow are the book itself.

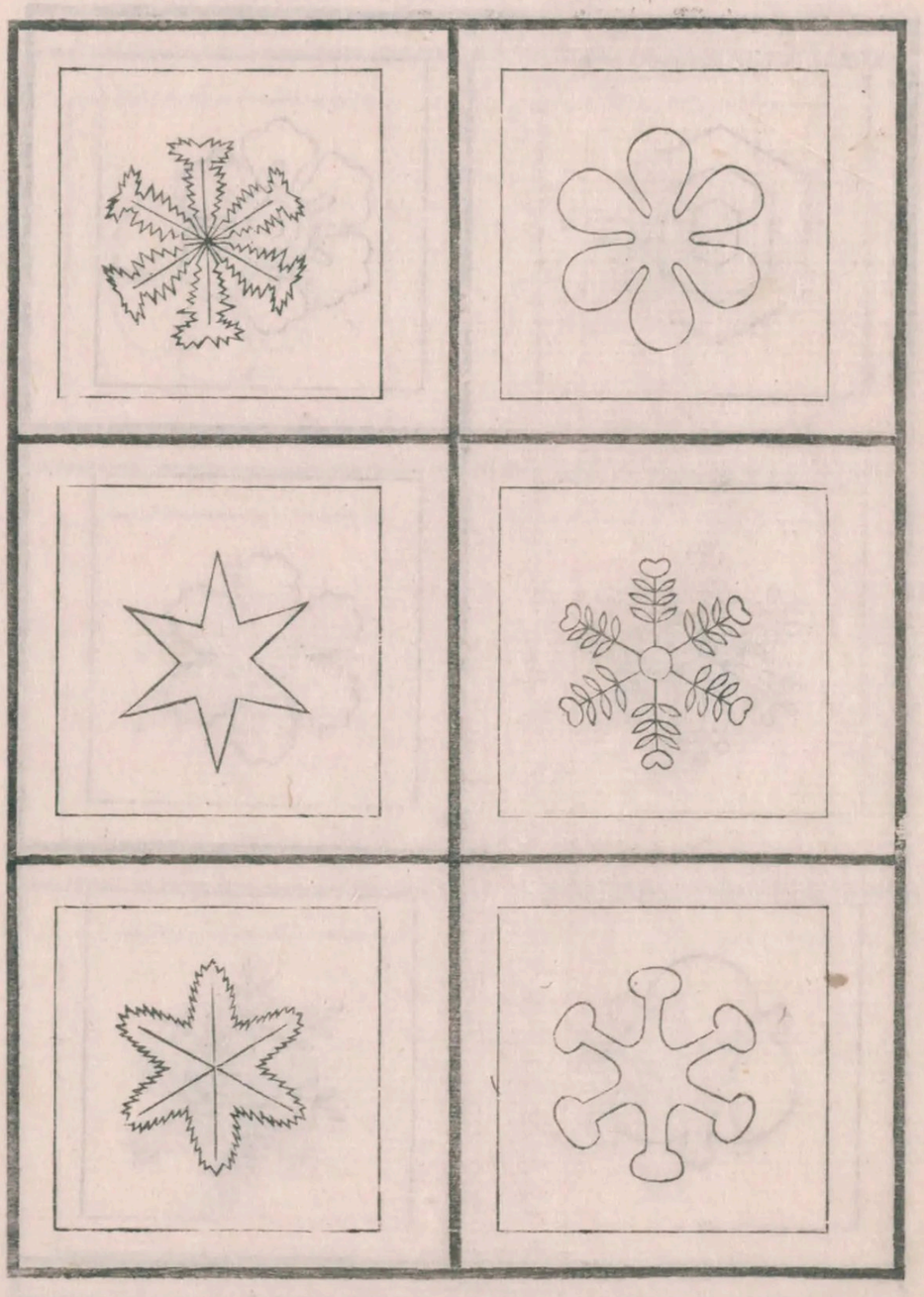
土井利位

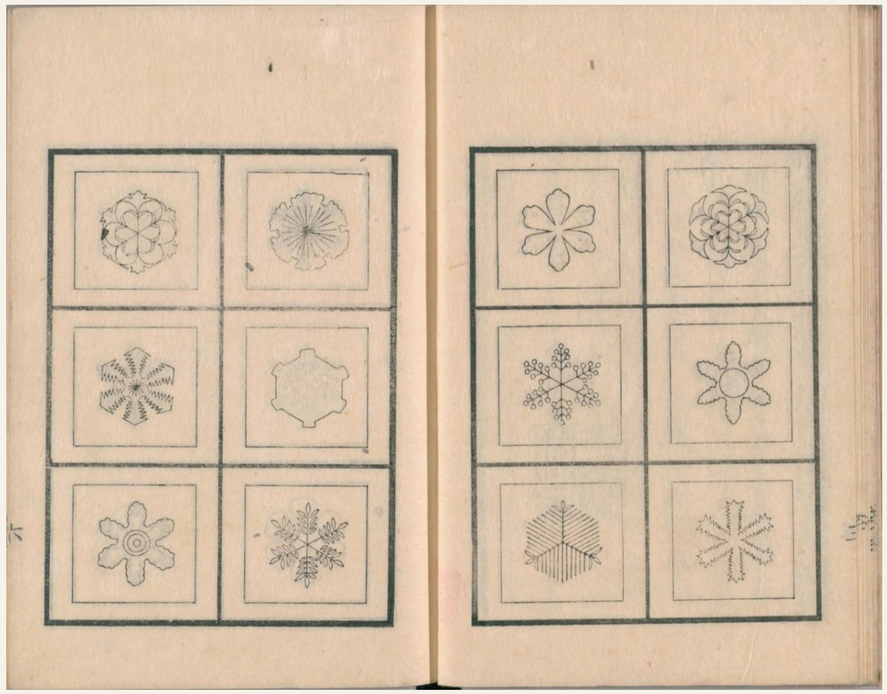
雪の殿様

The Snow Lord

Doi Toshitsura and the snow flowers of Edo


文政十一年戊子二種
文政十三年庚寅二月十八日十種





Plates from the 1862 recut of *Sekka Zusetsu*. National Diet Library.

SEKKA · STOWE, VERMONT

The Snow Lord

Doi Toshitsura and the snow flowers of Edo

A history for the Sekka team and our guests.

Current to 31 October 2026. Built from the Sekka research on Doi; when the research changes, this book is revised and rebuilt.

Contents

Preface 7

PART ONE THE SNOW

01 Black Satin 11
02 A Fourth Son 15
03 The Dutch Scholar 19
04 Twenty Winters 23
05 Other Eyes 27
06 Snow Flowers, Illustrated 33

PART TWO THE LORD

07 Osaka and Kyoto 41
08 Snowflakes as Currency 45
09 The Council 49
10 Oi Moyō 53
11 Food in Doi's World 59
12 The Private Man 63

PART THREE AFTERLIFE

13 The Rediscovery 67
14 What Survives 71
A Note on the Evidence 75

The Plates of 1832 77
Notes on the Sources 83
Timeline 86
Who's Who 89
Glossary 91
Sources 92
Picture credits 93
Index 95

Preface

This is a history of Doi Toshitsura (1789–1848), lord of the castle town of Koga and, for a time, the senior minister of the shogun's government. For some twenty winters he also caught snowflakes on black cloth, looked at them through a Dutch lens, and drew them. In 1832 he published the drawings in a small woodblock book, and its title gave Japanese a new word for a snow crystal: *sekka*, "snow flower." Our restaurant is named after it.

The book is in three parts. The first follows the snow: how Doi watched it, who helped him, and the book he made. The second follows the lord: his career, his gifts, his fashion, his table, and his death. The third follows what happened to his work after him, and what of it can still be seen.

The book draws on research we have gathered and checked: Doi's own text and the prefaces written for it, the diary of his chief retainer, Takami Senseki, the records of the museums that hold his belongings, and the work of Japanese scholars, above all the physicist Nakaya Ukichirō. Where the evidence is thin we say so, and where a story rests only on tradition we mark it. The notes at the back give the sources for each chapter, and the last chapter explains how we have weighed the evidence.

Some conventions. Japanese names are given family name first: Doi is the family, Toshitsura the man. Japan then counted years by era names and months by the moon. We give Western years throughout, but keep the Japanese month and day where a source records an event that way, so a diary entry reads "the 6th day of the 5th month, 1839." Money is given in *ryō*, a gold coin worth a good deal, and *mon*, a small copper coin; a piece of sushi in Edo cost about 8 mon.

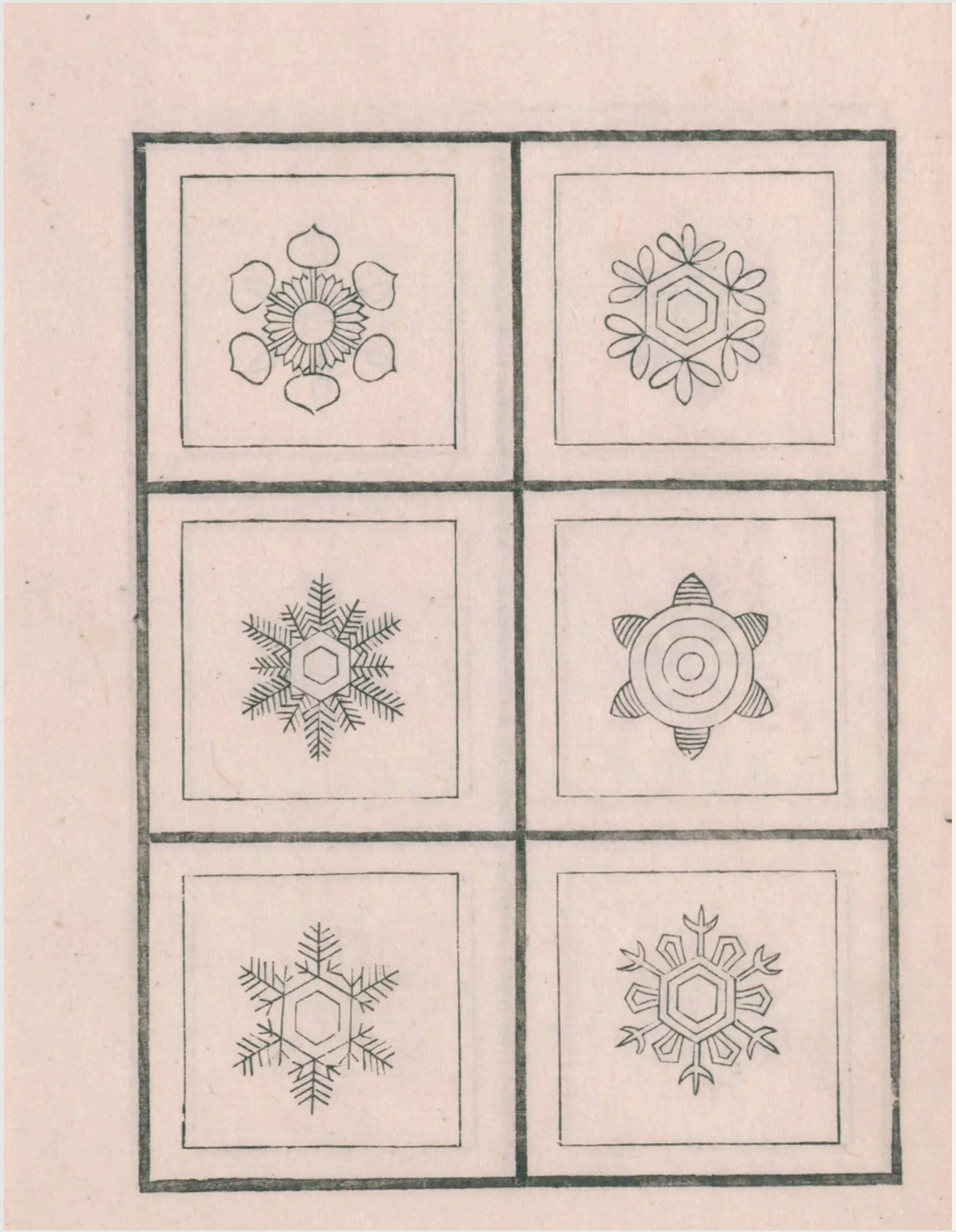
Doi wrote in formal classical Chinese. Our English versions of his words, and of the prefaces and afterwords to his books, are made from Aburakawa Hideaki's modern Japanese translation of 2022. A full translation from the original has yet to be made, so read our quotations as faithful in sense rather than final in wording.

Koga lies some sixty kilometres north of Edo, the city now called Tokyo. Kariya, where Doi was born, is near Nagoya; Osaka and Kyoto, where he served, lie to the west.

PART ONE

The Snow





CHAPTER 01

Black Satin

A method for seeing snow, and the man who practised it.

1804–18	Doi begins to observe snow "every time it snowed"
1832	A heavy fall at Koga yields thirty-one forms in a day
1832	*Sekka Zusetsu* introduces the word *sekka*

Opposite: *Sekka Zusetsu*, 1832, a page of plates.

Before the snow arrived, a length of black satin was set out of doors to take the cold. Doi insisted on it. A cloth that carried the warmth of the house would melt a crystal the moment it touched; a cloth chilled to the temperature of the air would hold it. When the flakes began to fall they landed on the satin and showed white against the black. One crystal at a time was lifted off with fine tweezers, laid on a piece of black lacquerware, and only then examined through the lens. Doi was exact about this last step.

> One must keep the breath away from them, and guard against the warmth of the hands.
>
> — Doi Toshitsura, *Sekka Zusetsu*, 1832

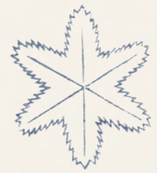
THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 10–11

Whatever survived the trip from sky to tray, he drew. By his own account he had watched the snow this way "every time it snowed" since the Bunka era, 1804 to 1818, when he was a young man with no particular prospects. His chief retainer, writing in 1832, put the habit at about twenty years. The dated plates in the book record the best of those winters. On the 9th day of the 12th month of 1832 a heavy snow fell on Koga and the crystals came down unusually clear. That one day gave thirty-one distinct forms, with shapes, the note beside them says, not seen in other years.

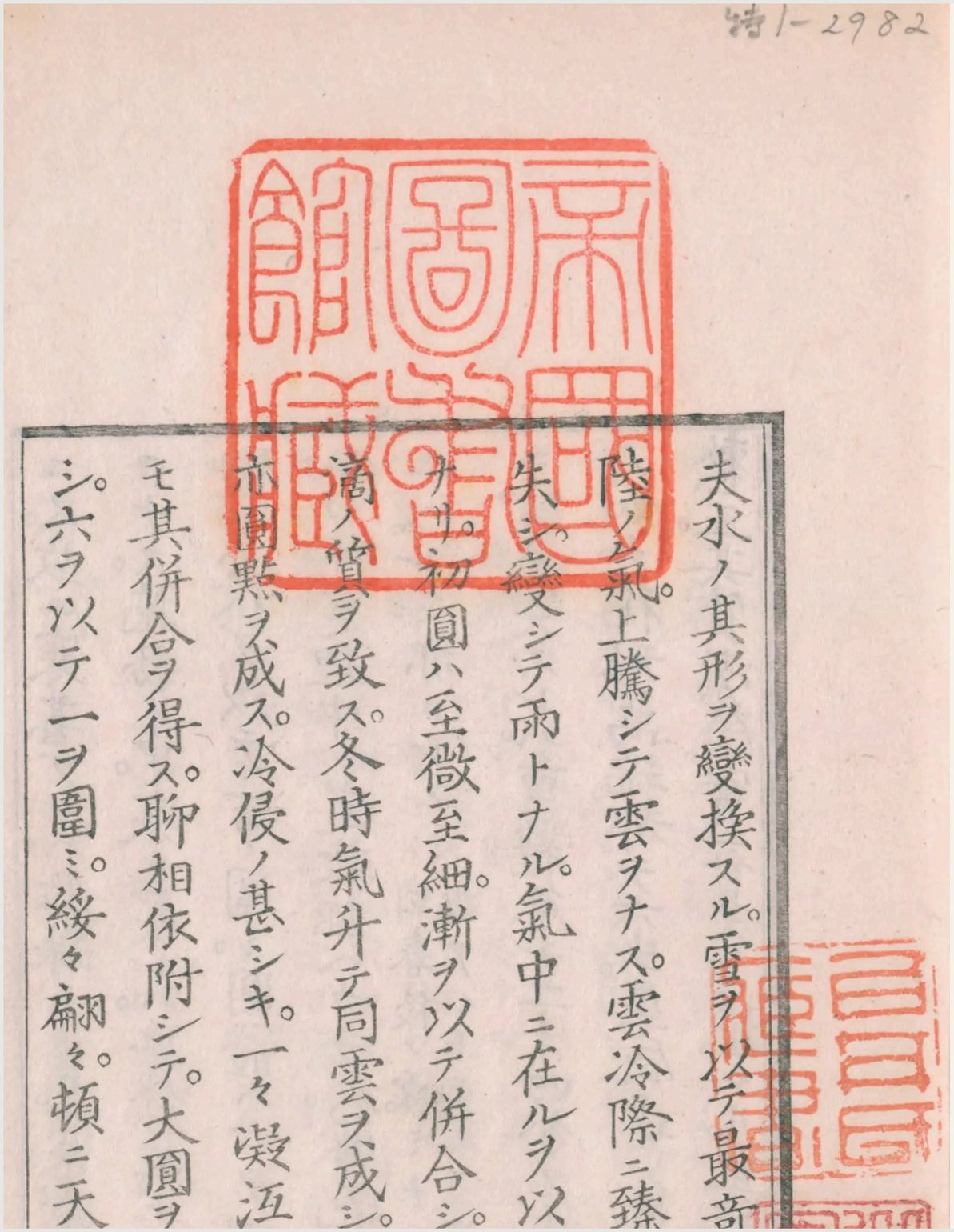
The same year Doi published eighty-six of his drawings in a small woodblock book, *Sekka Zusetsu*, "Snow Flowers, Illustrated." His retainer called it unprecedented in Japan, and as far as we know it was. The title also gave Japanese a new word. Snow had long had poetic names; Doi gave it a descriptive one, *sekka*, 雪華, the snow flower, and the word stuck.

The man bent over the lacquer tray was also one of the busiest men in the country. Over the next decade he commanded the shogun's castle at Osaka, put down an armed rising, sat on the council that governed Japan, and for ten months led it, until a fire and a shortage of money ended his career. The people of Edo knew little of his politics, but they knew his snowflakes. Within a few years of the book his crystals were woven and dyed into kimono, worked into sword fittings, printed on hand towels, and pressed into sweets, and Edo gave him the name he is still known by: *Yuki no Tonosama*, the Snow Lord.

This book follows both halves of that life: the scholar who stood behind him, the diary that recorded much of it, the fashion the book set off, and the food of his world, from the shogun's sea bream to the first nigiri sold in the streets of Edo.



THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 12–13



CHAPTER 02

A Fourth Son

From a younger son of Kariya to the lord of Koga.

1789	Born at Kariya, fourth son of its lord
1813	Adopted into the senior Doi house of Koga
1822	Succeeds as lord of Koga, 80,000 koku
1823–29	First appointments in the shogun's government

Opposite: *Sekka Zusetsu*, 1832, the opening of Doi's preface, under the seals of the libraries that have kept it.

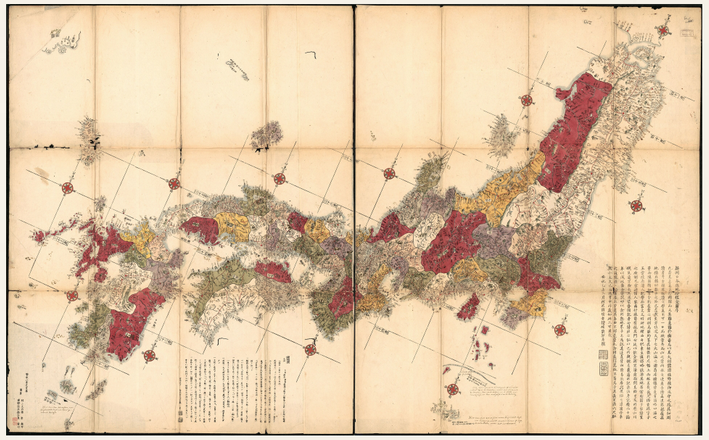
Doi Toshitsura was born on 15 June 1789 at Kariya, a small castle town in the province of Mikawa, not far from present-day Nagoya. His father, Doi Toshinori, was lord of Kariya, and Toshitsura was his fourth son. In a samurai household a fourth son could expect little. The eldest inherited the house, its lands, and its standing; the younger sons were educated, found modest posts, and waited for something better. For many of them it came through adoption.

It was a cultivated household. Toshinori had himself been born a son of the great Date house of Sendai and was known for court poetry, the aristocratic football game *kemari*, and the tea ceremony. His younger brother, Hotta Masaatsu, a senior official in the shogun's government for more than forty years, compiled the great bird encyclopedia of the Edo period and was a patron of the Dutch scholars Ōtsuki Gentaku and

Takahashi Kageyasu; two manuscripts on snow made in 1828 under Takahashi's name were shown beside Doi's book at Koga in 2026. Doi's interest in the natural world grew up in a family that took such things seriously.

Samurai houses adopted heirs as a matter of course. A house without a living heir did not let itself die out: it chose a young man of suitable birth and made him its son. In 1813 Doi Toshiatsu, lord of Koga and head of the senior branch of the Doi family, had lost his own son, and he adopted Toshitsura, then about twenty-four. The younger son of Kariya was now heir to one of the more distinguished houses in eastern Japan.

Koga stood on the Watarase River, on the highway north from Edo to the shogunal shrines at Nikkō. It was a castle town and a river port, with travellers and goods passing through all the time. The Doi had held it for generations, and the founder of their line, Doi Toshikatsu, had been one of the chief ministers of the early Tokugawa shoguns. When Toshiatsu died in 1822, Toshitsura succeeded him as lord of a domain assessed at 80,000 *koku*. With it came the court title Ōi-no-kami, which would later give its name to a fashion in snowflakes.



Japan as Doi knew it: Nagakubo Sekisui's road map, first published in 1779 and still reprinted in the 1840s. Library of Congress.

One of the earliest documents of his rule survives among the papers of his retainers. Soon after succeeding he wrote a letter honouring the loyalty of the family's founder and of his adoptive father. It notes that the domain had recently been raised from 70,000 to 80,000 koku, and asks that he be "taken up" for service in the shogun's government, as his father had been. The museum at Kariya reads it as the letter of a loyal and sincere man, and points out how few surviving documents say anything about his personality at all.

THE SHOGUN'S JAPAN

In Doi's time Japan was governed from Edo by a military administration, the shogunate. The emperor lived in Kyoto, revered but without political power. The country was divided into some 260 domains, each held by a lord, or *daimyō*, and a domain's size was measured in *koku* of rice, one koku being roughly what a person ate in a year. At 80,000 koku, Koga was a domain of middling rank. The government was run by a small council of senior lords, the *rōjū*, and a seat on it was the top of a samurai career. Japan was largely closed to foreigners. The only Westerners allowed to trade were the Dutch, confined to the small island of Dejima in the harbour of Nagasaki, and through them a thin stream of European books, instruments, and ideas came into the country.

Toshitsura's request was granted. In 1823 he got his first post in the shogun's government, as a master of ceremonies, and within a year or two he was a magistrate of temples and shrines, responsible for religious affairs across the country. Over the next fifteen years he held nearly every senior post open to a lord of his rank, in Osaka, in Kyoto, and finally on the council itself.

Through all of it, whenever snow fell, he went out with his black cloth. He had started before Koga, as a younger son with time to spare, and he kept it up in high office. He did not do it alone. From before his succession until long after it, he had beside him a retainer whose learning made the work possible: a scholar of Dutch learning named Takami Senseki.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 16–17



CHAPTER 03

The Dutch Scholar

Takami Senseki, the retainer who brought Western learning to Koga.

1785	Takami Senseki born
1797	Begins a diary he will keep for sixty years
1837	Watanabe Kazan paints his portrait
1850	Draws the first Japanese map of the Netherlands
1858	Dies at Koga

Opposite: Takami Senseki, by Watanabe Kazan, 1837. Colour on silk. National Treasure, Tokyo National Museum.

Takami Senseki was born in 1785, four years before Doi, into a family that served the lords of Koga. He first served Doi's adoptive father and was close to the young Toshitsura before he succeeded. He became his tutor and rose to be his *karō*, the chief retainer who ran the domain's affairs. When Doi went to Osaka, Senseki went with him, and when Doi needed something done, it was usually Senseki who did it.

Senseki was a student of *rangaku*, "Dutch learning," the study of Western knowledge through books in Dutch. He collected maps and books on astronomy, geography, and military science, and every report he could get of the world beyond Japan. He even took a Dutch name, given him by the head of the Dutch trading post at Dejima, and signed himself Jan Hendrik Daper. He knew the painter and scholar Watanabe Kazan,

the official interpreters at Nagasaki, and Daikokuya Kōdayū, a shipwrecked sailor who had spent years in Russia before coming home. In 1850 Senseki drew the first Japanese map of the Netherlands.

However far apart East and West may be, what is loved is the same.

— Takami Senseki, afterword to *Sekka Zusetsu*, 1832

Koga City's official account says it was Senseki who recommended watching snow as part of the young lord's education, and calls him the "editor or producer" of the book. He supplied its method, taken from a Dutch work of natural science; the lens very probably came through him; and for years afterwards it was Senseki who sent copies across Japan. Some have asked whose book it really was. A Tokyo museum catalogue of 1939 named Senseki, not Doi, as its author, and Nakaya Ukichirō, who studied it more closely than anyone, suspected the same. The fairest answer is that it was both of theirs. Doi watched and drew, through twenty winters and years of high office. Senseki supplied the method, the books, the lens, and the network that carried the book far beyond Koga.

Watanabe Kazan painted Senseki in 1837, and the portrait is one of the most celebrated in Japan. It shows him in ceremonial dress: a tall folded cap, a formal robe with the Takami crest, and at his side a short sword bearing the crest of the Doi. The robe is drawn in the traditional way, in line; the face is modelled with Western shading. Family tradition says Senseki called on Kazan in this dress on his way back from a temple, where he had gone in Doi's place to report the suppression of the Ōshio rising. The story cannot be documented, and one scholar has argued that Kazan actually finished the painting in 1841 and dated it earlier to protect his friend: Kazan had been arrested in 1839 for criticising the shogunate's foreign policy, and he took his own life in 1841. The portrait stayed with the Takami family until 1938, when Senseki's great-grandson sold it to the Tokyo National Museum. It is now a National Treasure, and by date of painting the most recent work to hold that rank.

Senseki kept a diary from 1797, when he was a boy, until 1857, the year before he died: some eighty volumes over six decades. It is plain and matter-of-fact, mostly official business, yet many of the best episodes in this book come from it: who was given a snowflake, what came back, and what else went in the same parcel. Senseki outlived his lord. He was dismissed in 1846, retired to Koga, and died there in 1858. His thatched house still stands beside the Koga City Museum of History.

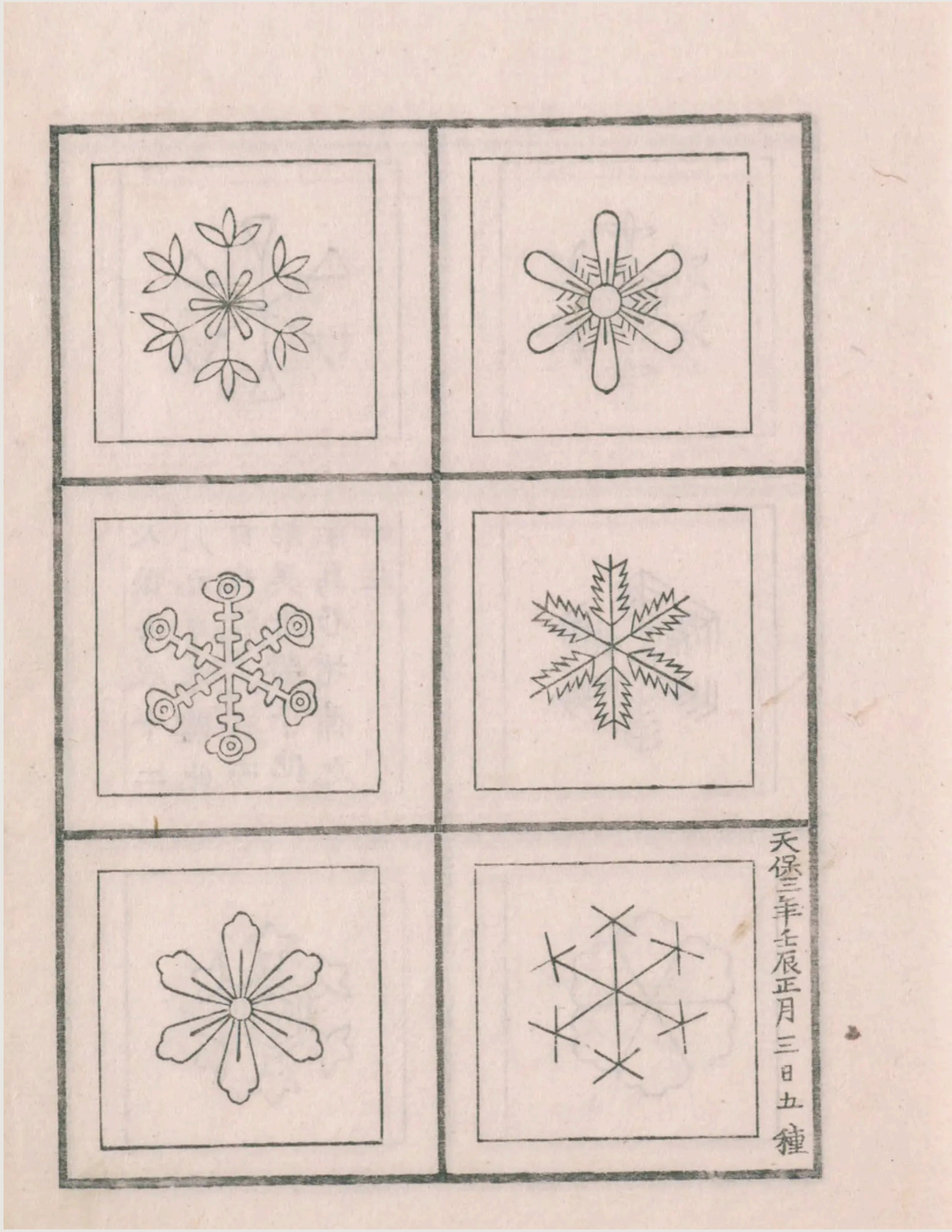


The Takami Senseki Memorial House in Koga, beside the city's museum of history.

DUTCH LEARNING

For two centuries the Dutch were Japan's only regular link to Western science. A small group of scholars learned to read Dutch and translated what arrived: books on anatomy, astronomy, medicine, and geography. A translated Dutch anatomy text, published in 1774, got the movement going, and by Senseki's time Dutch microscopes, telescopes, and thermometers could be bought in Edo by anyone who knew where to look.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 20–21



CHAPTER 04

Twenty Winters

What Doi observed, how he explained it, and why he thought it mattered.

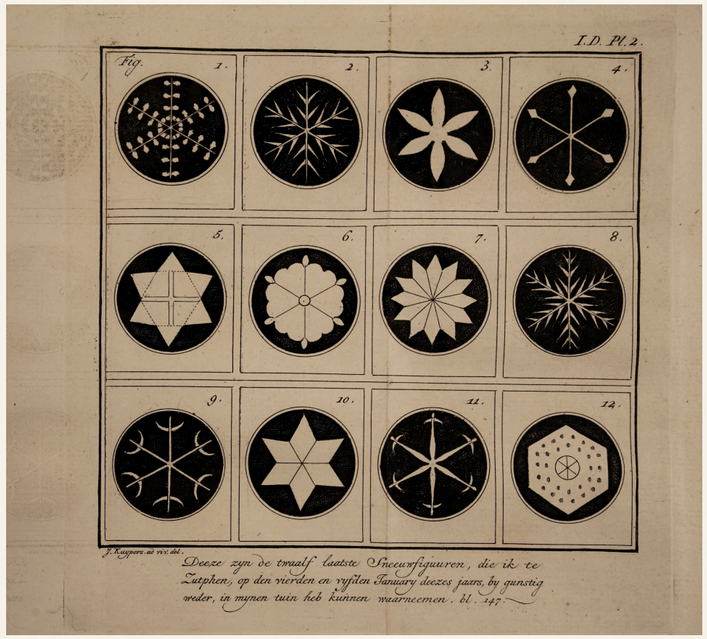
c. 1812	Observations begin, by Senseki's reckoning
1832	"About twenty years" of observation, in Senseki's words
1835	Twenty-four forms recorded in a single Osaka snowfall
1840	The sequel extends the record to some thirty years

Opposite: *Sekka Zusetsu*, 1832, a page of plates.

Doi was not the first person in Japan to look at snow through a lens. A generation earlier the botanist Ono Ranzan is said to have done it every winter. Doi kept at it for decades, noted the date and place of each fall, and published what he found.

He called his procedure "the Western method," and it came from a Dutch book, J. F. Martinet's *Katechismus der Natuur*, published in the 1770s. Martinet advised chilling a black cloth, catching the snow on it, examining it with a lens, and keeping breath and warm hands away. Doi added one thing. Where some European observers laid their specimens on polished black stone, he used black lacquer, which conducts heat poorly and so keeps a crystal longer. More than a century later Nakaya Ukichirō singled this out as a real improvement. What the lens was is less certain than is usually supposed. The text says only "take a lens." Nearly every account calls it a Dutch microscope, very likely rightly, but the book never uses the word.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 22–23



The snow crystals in J. F. Martinet's *Katechismus der Natuur* (Amsterdam, 1777–79), the Dutch book behind Doi's method. Doi's first volume reproduces twelve crystals from Martinet. Wellcome Collection.

He kept observing after he entered government. Posted to command Osaka Castle and then to Kyoto, he went on watching, and in the preface to his second volume he wrote that through four years at Osaka and one at Kyoto "my old habit did not change." The plates record falls at Osaka, where twenty-four forms were taken on a single day in 1835, at Kyoto, and at Edo. His aide Komatsu wrote in 1840 that the lord, now in high office, "had no time to eat from morning to night," and still put the book together between affairs of state. The Confucian scholar Satō Issai, in a foreword, teased him for his "peculiar hobby" and then defended it on classical grounds: the study of small things leads to the understanding of large ones.

The wonder of creation changes in a thousand ways, without end.

— Doi Toshitsura, preface to the sequel, 1839

Doi also tried to explain what he saw. Water vapour, he wrote, rises, cools, and forms tiny round droplets, which in hard cold freeze before they can merge. Round bodies packed together always settle six around one, and "that is the only reason snow flowers are six-pointed." The droplets were wrong, but the question was a good one, and he was not the first to ask it. The six-around-one argument reached him through a Chinese book of natural philosophy and goes back to Johannes Kepler, who wrote a short treatise on the six-cornered snowflake in 1611. Doi also rejected a folk belief that snow falling after the first day of spring has five points. He had looked, and it did not.

WHY SNOW HAS SIX SIDES

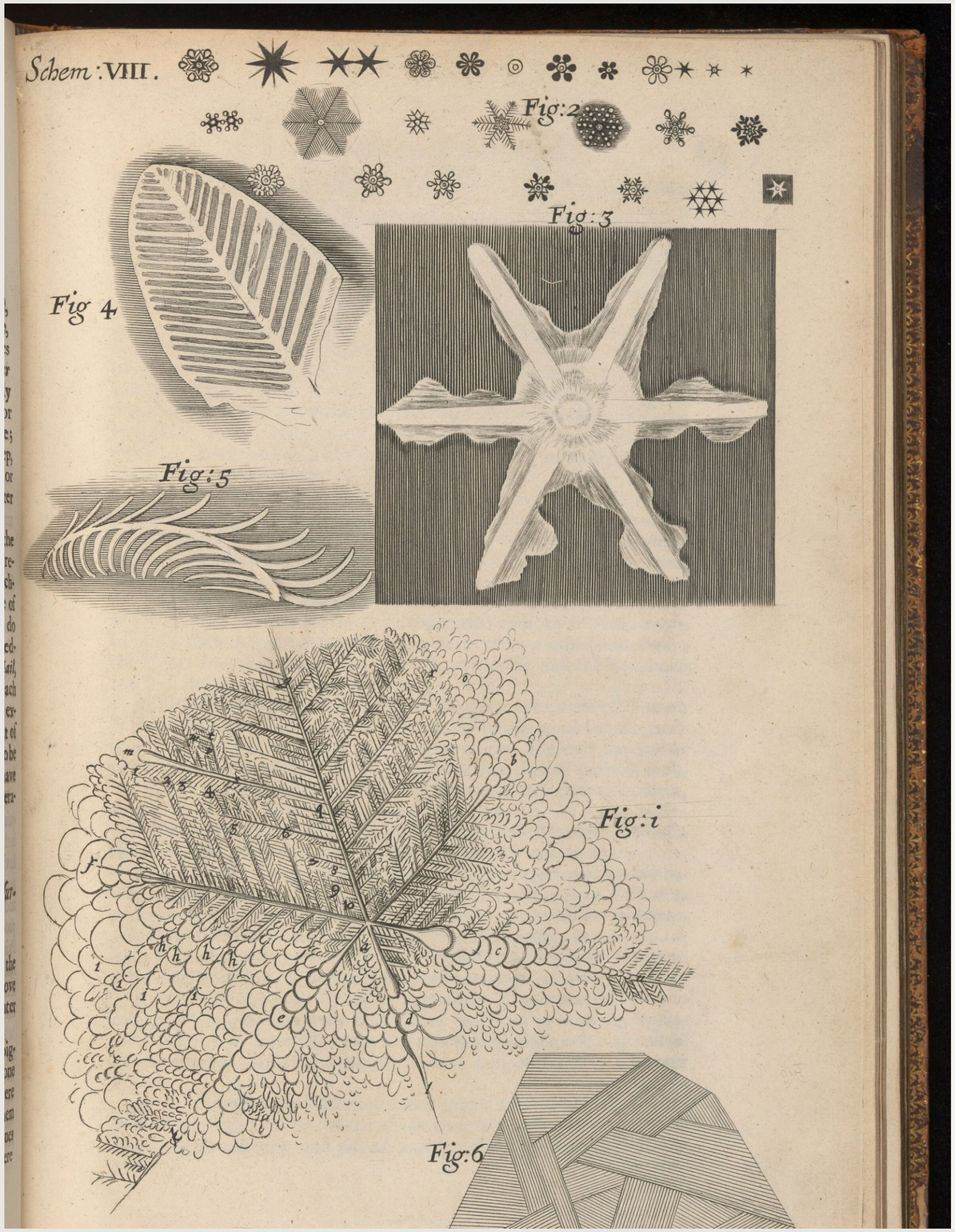
Doi's question was answered in the twentieth century. When water freezes, its molecules lock into a hexagonal lattice, so every ice crystal starts as a tiny six-sided plate. Whether it grows into a plain hexagon, a star, or a branching, fern-like form depends on the temperature and humidity of the air it falls through. Nakaya Ukichirō, the physicist who studied Doi's book, worked out that relationship, and in 1936 he grew the first artificial snow crystals in a laboratory.

How faithful were Doi's drawings? In 1939 Nakaya compared twenty-two of the plates with his own photomicrographs of snow from the mountains of Hokkaidō and found most of them extremely faithful to nature. The twelve-branched crystals, with their alternating long and short arms, he called astonishing.

Doi ended his first volume with an answer to the obvious question: why a lord should spend his winters this way. He listed fourteen uses of snow. Snow, he wrote, cleanses the air, and clean air refreshes the spirit. It feeds the clouds and rain and the sources of rivers. It cures chilblains, and water from snow gathered at the winter solstice is good against fevers. It shelters plants and hibernating insects and carries sledges; it covers winter crops without crushing them. Stored in pits, it keeps meat and fish fresh through the summer and cools drinks for feasts. It keeps the winter sky from darkening, holds a "vital air" that enriches the soil, and lights dark northern rooms on winter nights. It drives locusts deep into the ground, so the next harvest is good. It teaches scholars and moves poets and painters. It cleanses filth and stands for purity, and because it melts slowly it keeps the rivers from running dry.

He wrote the list in the early 1830s, during a famine brought on by years of cold, wet weather, and one modern scholar reads it as a sign of a social purpose behind the hobby: a lord asking what snow does for the people who farm. Doi ended with thanks. Snow, he wrote, is "cool in summer, warm in winter." We do no more than tread on the snow in the road, and yet we cannot help feeling grateful for it.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 24–25





CHAPTER 05

Other Eyes

Who else had looked closely at snow,
and where Doi stands among them.

1611	Kepler writes on the six-cornered snowflake
1665	Hooke draws snow through a microscope
1747	Engelman pictures 420 crystals from one winter
1820	Scoresby draws 96 crystals in the Arctic
1855	James and Cecilia Glaisher publish 151
1885	Bentley photographs his first snow crystal

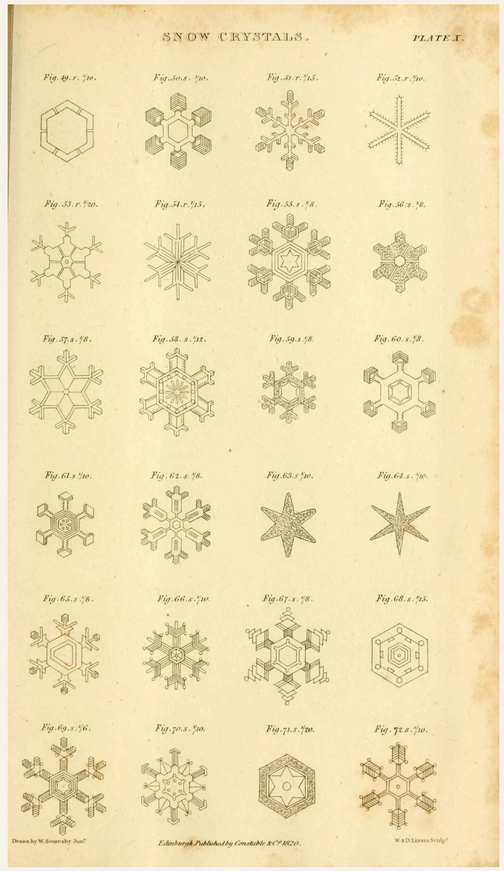
Opposite: Robert Hooke's "frozen figures," from *Micrographia*, 1665. Wellcome Collection.

On the 4th of February 1635, in Amsterdam, René Descartes went out into a hard frost and looked at the hail. The grains were small and round, and each had six little teeth around its edge, "like the teeth of a clock's wheel." The next morning he found thin, flat, very clear plates of ice, "so perfectly cut into hexagons," and he drew them. He wrote it all up in *Les Météores*, published in 1637, nearly two hundred years before Doi set out his black satin.

Doi was not the first to look. The six-pointed snowflake is an old observation, and the oldest record of it is Chinese. A line attributed to the scholar Han Ying, of the second century BC, says that the flowers of plants and trees are mostly five-pointed, but "snow flowers alone are six-pointed." The book it is credited to no longer contains it; it survives only as a quotation in a Tang encyclopedia of the seventh century. From then on *liuchu*, "six-going-out," was a poet's word for snow. The philosopher Zhu Xi, in the twelfth century, explained it as sleet splashed open by the wind, like mud thrown on the ground, and added that six was the number of yin.

In Europe the record begins with a fancy. Olaus Magnus, the Swedish churchman, printed a woodcut of snow shapes in 1555, but hardly any of them resemble real crystals, and he missed the hexagon altogether. In 1611 Johannes Kepler, mathematician to the emperor in Prague, wrote a short Latin essay on the six-cornered snowflake as a New Year's gift for a friend. He did not draw snow; he asked why it should have six sides, compared it to the stacking of cannonballs and the cells of a honeycomb, and admitted that he did not know. Descartes, twenty-four years later, explained the hail's six teeth by supposing that each grain had been "surrounded by six others in one plane." It was the same geometry Doi would use.

The microscope changed what could be seen. In 1665 Robert Hooke, curator of experiments to the Royal Society in London, published *Micrographia*, the first great book of things seen through a lens. One plate shows snow: starry flakes, a single crystal magnified until its feathered arms fill the frame, and frost on water and stone. Hooke wrote that he had observed more than a hundred forms. In 1681 Donato Rossetti of Turin sorted some sixty into types. In 1747 Jan Engelman, a Dutch physician, published twenty-eight plates of crystals from the hard winter of 1740, four hundred and twenty in all, the largest set anyone had made. In 1777 another Dutchman, the clergyman J. F. Martinet, printed the plate of twelve crystals from his garden at Zutphen that Doi would copy into his own book.



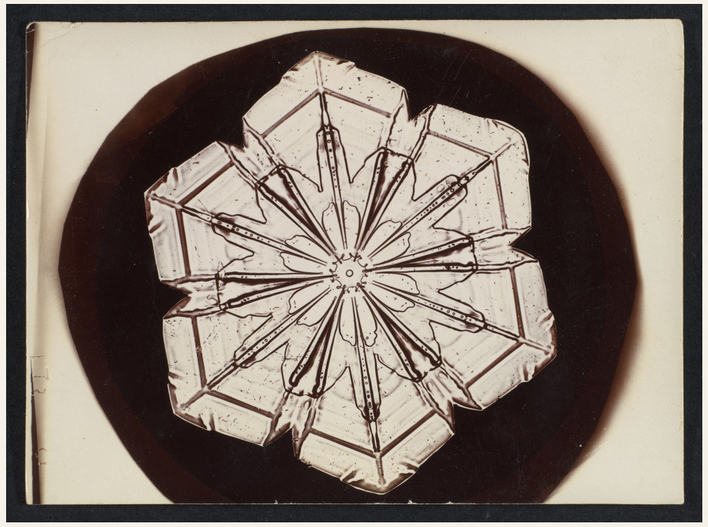
Snow crystals magnified from thirty to four hundred times, Plate X of William Scoresby's *Account of the Arctic Regions*, 1820. Public domain.

The finest record before Doi came from the Arctic. William Scoresby, a whaling captain from Whitby with a scientist's training, drew ninety-six crystals at sea and published them in 1820 in *An Account of the Arctic Regions*, "magnified from thirty to about four hundred times." He sorted them into five kinds, and among them were forms Doi never drew: needles, columns, and crystals shaped "like a pair of wheels, united by an axletree." Those grow in colder air than Koga's.

Doi's two volumes fall between Scoresby and the next great drawn set. Between January and March 1855 the meteorologist James Glaisher sketched more than a hundred and fifty crystals near London, and his wife Cecilia finished them, drawing out

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 28–29

each arm with perfect symmetry. Their 151 figures were the last of the great drawings. In the last days of 1892 Richard Neuhauss photographed snow crystals through a microscope in Berlin, and the following year Gustav Hellmann published fifteen of the photographs, believing them the first ever printed. Wilson Bentley, a farmer's son in Jericho, Vermont, had in fact made his first photograph of a snow crystal in January 1885, at nineteen, but he did not publish until 1898. When he died in 1931 he had photographed more than five thousand.

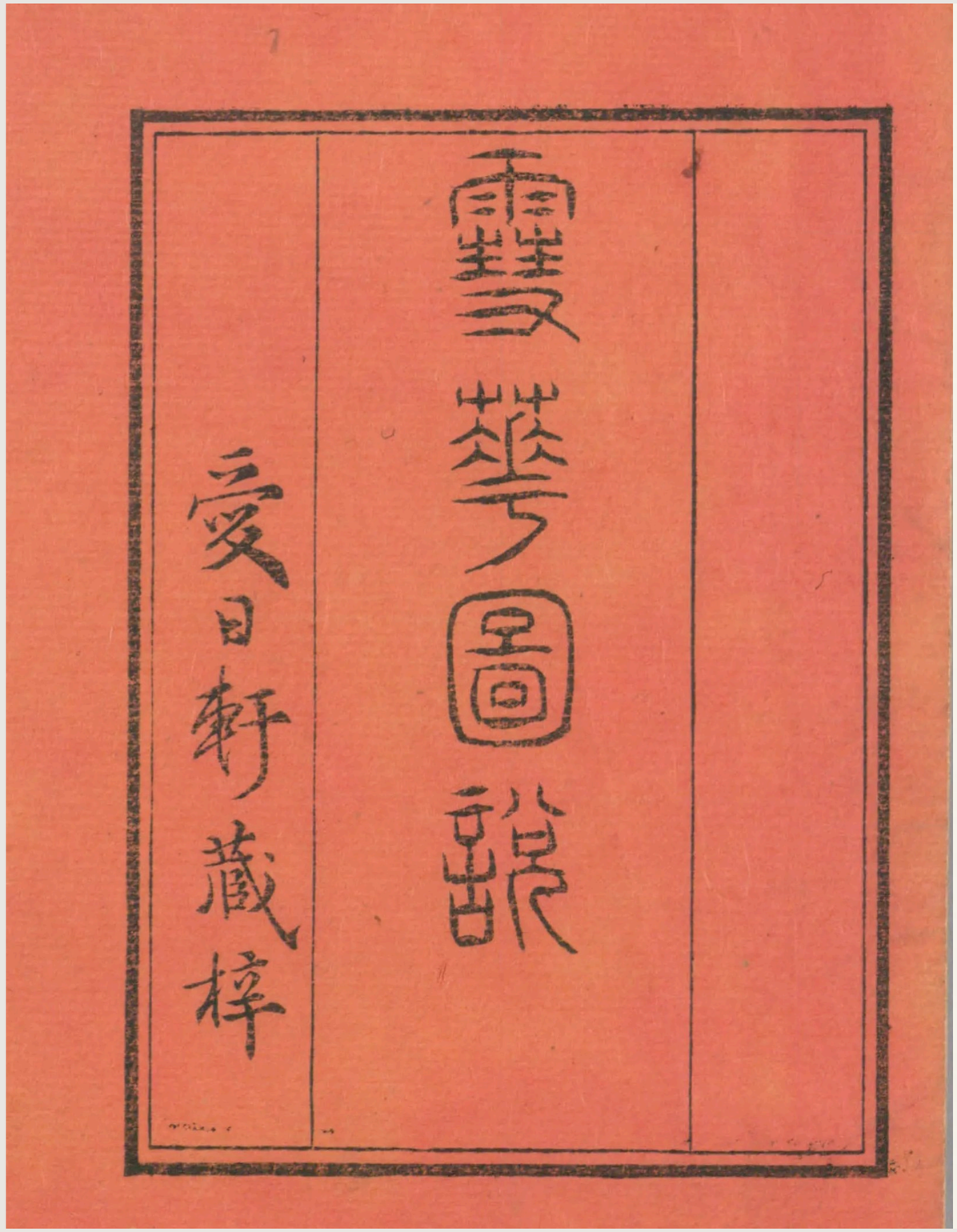


A snow crystal photographed by Wilson Bentley in Jericho, Vermont, between the 1890s and the 1920s. The Metropolitan Museum of Art.

Against this company Doi's place is clear. He was not the first in the world to draw snow through a lens; Hooke was, by a hundred and sixty-seven years. His were not the most crystals; Engelman's were. His method and twelve of his figures came from Martinet, and his explanation of the six points had a European pedigree. Scholars trace it to a Chinese book of astronomy, the *Tianjing huowen*, which drew on Jesuit learning and was widely read in Edo Japan in an annotated edition. What Doi made was the first such record in Asia: 183 crystals of his own across two volumes, more than Scoresby's or the Glaishers', and most of them dated by the day they fell. Nakaya Ukichirō, who knew both, judged the Glaishers' drawings the finest made before photography and Doi's no worse.

The two traditions never met. Hellmann's history of snow-crystal study, published in Berlin in 1893 and thorough to the point of listing woodcuts nobody believed, has no entry for Japan. Doi drew in Koga without knowing of Hooke or Scoresby, beyond what Martinet passed on, and Europe went on drawing and then photographing snow without knowing of Doi.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 30–31



CHAPTER 06

Snow Flowers, Illustrated

A book that was never sold, and travelled everywhere.

1832	*Sekka Zusetsu*: eighty-six crystals of Doi's own, and twelve from a Dutch book
1837	A popular book on the snow country reprints the crystals
1840	The sequel adds ninety-seven more, for 183 in all
1862	The book is recut on new woodblocks

Opposite: The title page of the 1832 first edition, 雪華圖説, with the imprint of Doi's studio, 愛日軒.

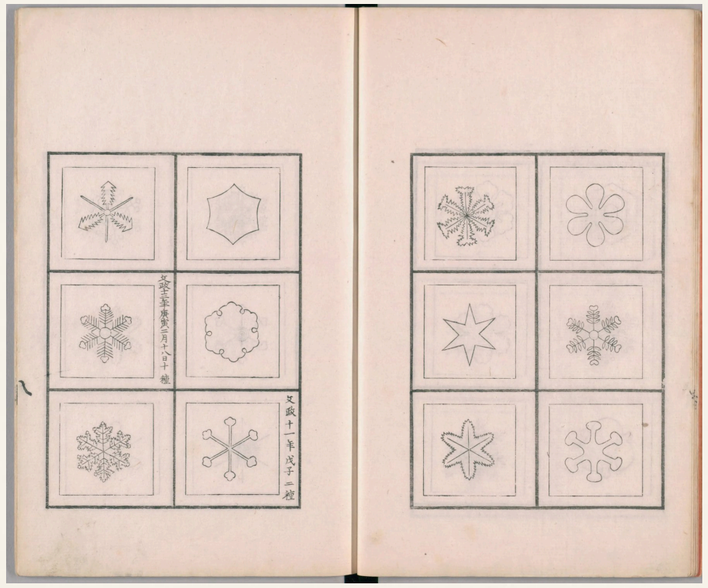
Sekka Zusetsu is a small book, about eighteen centimetres tall, the size of a popular storybook of its day. It was printed from carved woodblocks in 1832, though some dictionaries date it to 1833, because its last month by the Japanese calendar fell early in 1833 by the Western one. It was never sold. It was a private edition, issued under the name of Doi's own studio, the Aijitsu-ken, or "Hall of Loving the Day," and given away.

The heart of the book is its plates: eighty-six crystals drawn by Doi, printed six to a page in ruled square frames, many labelled with the date they fell. Next to them are twelve crystals copied from Martinet's Dutch treatise, making ninety-eight in all, and

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 32–33

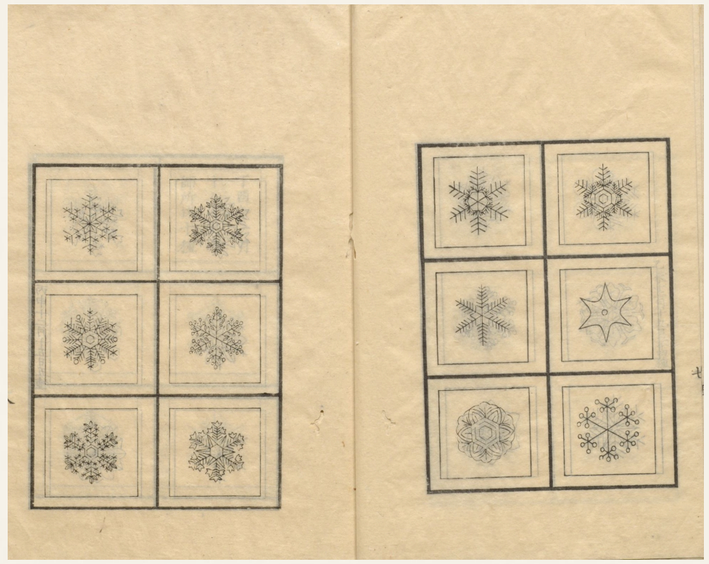
Senseki notes in his afterword, clearly pleased, that several of the Dutch figures match Doi's exactly. After the plates come Doi's account of how snow forms, his method of observation, and his fourteen uses of snow. The book ends with afterwords by Senseki and by a member of the Katsuragawa family, physicians to the shogun and one of the leading houses of Dutch learning in Edo.

Snow already had poetic names, among them *mutsu no hana*, the "six-petalled flower." Doi called the crystals *sekka*, 雪華, the snow flower, and the word passed into general use.



A spread of plates from the 1832 first edition. The vertical notes record the date on which each crystal fell. National Diet Library.

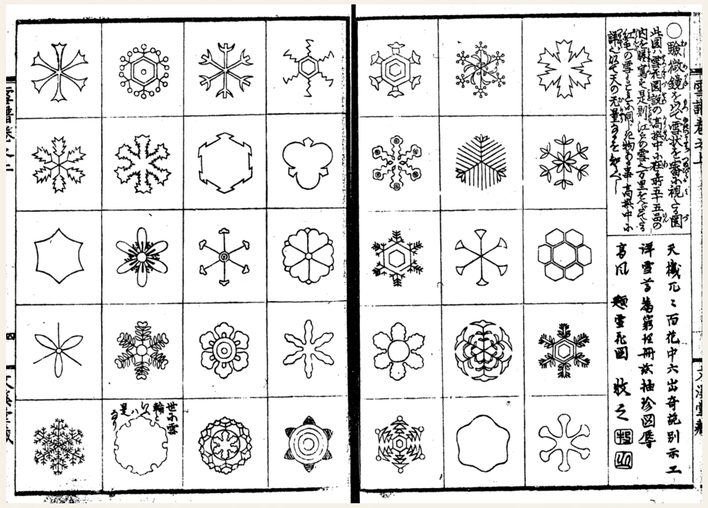
Doi kept observing and drawing through his years in Osaka and Kyoto, and some of the new crystals are labelled as caught inside Osaka Castle or in Kyoto. In the spring of 1840 he published a sequel, *Zoku Sekka Zusetsu*, with ninety-seven new crystals, 183 across the two volumes. Its preface is dated the 11th month of 1839 and its postscript the 2nd month of 1840, and its last group of crystals fell on the 5th day of that month, which settles the date that dictionaries give as 1839 or 1840. This time the prefaces came from Doi himself, the scholar Satō Issai, the poet and scholar Honma Yūsei, and his aide Komatsu. The sequel is now very scarce. Nakaya, writing in 1939, called it a rare book and reported that the Doi family still had the original drawings its blocks were cut from.



Plates from the sequel, *Zoku Sekka Zusetsu*, 1840. Shinshu University Library.

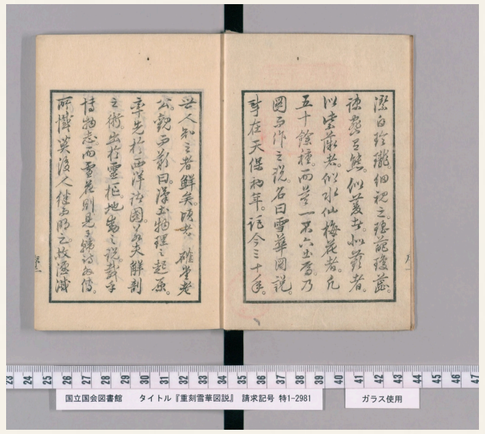
A book that could not be bought still became widely known. It went out one copy at a time over many years, mostly through Senseki: to the emperor and the retired emperor, to the shogun and his heir, and to temples, physicians, scholars, interpreters, and friends. People who were given it copied it, and others copied the copies. In 1837 the writer Suzuki Bokushi began publishing *Hokuetsu Seppu*, "Snow Stories of Northern Echigo," a popular account of life in Japan's deep-snow country, and reproduced thirty-five of Doi's crystals in it. From then on anyone who could buy a book could see them, and within a few years they were on clothing all over Edo, as chapter 10 tells.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 34–35



Doi's crystals in Suzuki Bokushi's *Hokuetsu Seppu*, 1837, the book that put them within reach of anyone who could buy a book. National Diet Library.

In 1862, fourteen years after Doi's death, the scholar Ōtsuki Bankei had the book recut on new woodblocks; chapter 13 follows it from there. Once you know what to look for, the recut is easy to tell from the original: its lines differ in character, and its title page carries a different publisher's mark.



The title page of the 1862 recut: the same title on new blocks, with a different publisher's mark, 祥苑書屋. National Diet Library.

Original copies very seldom come up for sale. The Koga City Museum of History has one, designated an Important Cultural Property, and others are in the Tokyo National Museum, the National Diet Library, Waseda University, the New York Public Library, and a few other collections. A copy in the Printing Museum in Tokyo carries the seal of Katsu Kaishū, the statesman who negotiated the peaceful surrender of Edo in 1868. The National Diet Library has put both the 1832 first edition and the 1862 recut online, free to read.

THE TWO EDITIONS

Most images going around today under the title *Sekka Zusetsu* come from the 1862 recut, not from Doi's original. The 1832 first edition can be recognised by its bright orange title page, stamped with the name of Doi's studio, 愛日軒. Unless a caption says otherwise, the plates in this book are from the 1832 edition.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 36–37



PART TWO

The Lord



Doi Toshitsura. A portrait in the possession of Shōjō-ji, Koga.

CHAPTER 07

Osaka and Kyoto

A famine, a rising, an arrest made by Koga's own men, and the road to the council.

1834	Given command of Osaka Castle
1837	Ōshio Heihachirō's rising, and his capture
1837	Sent to Kyoto as the shogun's deputy
1838	Called to the council in Edo

The cold years that gave Doi his clearest crystals also brought famine. Through the 1830s a run of cold, wet summers ruined harvests across Japan in what became known as the Tenpō famine, one of the worst of the period. People starved in the countryside, and in the cities rice cost more than the poor could pay. The National Diet Library points out that the weather that made Doi's snow so clear was the same weather that caused the hunger.

On the 11th day of the 4th month of 1834 Doi was given command of Osaka Castle, the shogun's great fortress in the west, and promoted in court rank. Osaka was Japan's commercial capital and the centre of its rice trade. The post was a step on a well-worn ladder: master of ceremonies, magistrate of temples and shrines, Osaka, Kyoto, and then, for the lucky few, the council. Doi had asked for exactly this career in the letter he wrote on succeeding to Koga twelve years before. The Doi house also

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 40–41

held land in the region, a cluster of villages in Kawachi and Settsu run from an office at Hirano-gō, south of the city. It had borrowed heavily from those villages since 1827, and the debt would matter later.

By early 1837 Osaka's streets were full of hungry people. Ōshio Heihachirō, a former police official and a respected scholar, decided the authorities would do nothing. He sold his library to feed the poor, gathered followers, and on the 19th day of the 2nd month, 25 March 1837, rose in armed revolt. As keeper of the castle Doi was the senior shogunal officer in the city. He ordered its defence and called on the domains nearby for troops, and checkpoints went up through the town and its outskirts. The rising was put down by evening, but a fifth of Osaka burned, and in Edo there were rumours that the castle had fallen. Ōshio escaped and vanished.

Some forty days later a maid came to the Koga domain's office at Hirano-gō. At the house of a cloth dealer, she said, a rice tub and a tea bowl were left under a shelf every morning, and by the next morning the tub was empty: someone hidden in the house was being fed. Senseki checked the story, briefed the arresting party, and squared things with the town magistrate. On the 27th day of the 3rd month the men went in, armed with oak staves cut to half length for fighting indoors. Ōshio shouted that he had guns; the answer came back that everyone knew he had none. As they broke in he killed himself and set off a charge of gunpowder. The tip had come to Koga's own office and the arrest was led by Koga's own chief retainer, which is why the relics of that morning are in Koga today. The capture staff and Senseki's account in his diary are, in the Koga museum's words, unique in conveying Ōshio's end so vividly, and a letter of commendation in Doi's name is reported to survive as well.

Seven weeks after Ōshio's death, on the 16th day of the 5th month, Doi was made the shogun's deputy in Kyoto, with a further rise in rank. Every source ties the promotion to the rising. A notice survives from his year there, a prohibition posted at the Kitano shrine and signed with his formal name. He kept watching snow. In the preface to his second volume he wrote that through four years at Osaka and one at Kyoto "my old habit did not change," and the sequel's plates include crystals collected inside Osaka Castle in the first days of 1835 and in Kyoto in the winter of 1837.

In the 4th month of 1838 he was called to Edo as a member of the council. On the journey east by the inland road, his name and Senseki's were written together in the register of a lords' inn at Oiwake, in the mountains of Shinano, where a twentieth-century historian found them. The gifts that helped put him there, and the six years that followed, are the next two chapters.

In Osaka, a temple Doi often visited while he held the castle still has a nickname taken from his: people called it "Lord Doi's Daishi," and over time it wore down to "Dondoro Daishi."

OSAKA CASTLE

The keeper of Osaka Castle, the *jōdai*, was always a hereditary vassal lord of the Tokugawa. He commanded the garrison of the shogun's main fortress in the west and watched over the domains of western Japan, but he did not govern the city, which had its own shogunal magistrates. The post was held for a few years at a time and was the usual step before Kyoto and the council.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 42–43



CHAPTER 08

Snowflakes as Currency

A lacquer cabinet, a fold of sea bream,
and a loan of two thousand ryō.

1838	A snowflake tea bowl fired by Doi himself
1839	A snowflake cabinet for the retired shogun; sea bream in return
1839	Doi appointed to the inner council in December
1840	Snowflake inrō accompany a loan of 2,000 ryō

Opposite: A netsuke of Daruma with stylised snowflakes, ivory, nineteenth century. The Metropolitan Museum of Art.

Before dawn on the 4th day of the 5th month of 1839, Takami Senseki left his residence by lantern light with one retainer and a small travelling trunk. Inside, in an outer box and wrapped twice in cloth, was a cabinet of gold lacquer decorated with snowflakes. It was for Tokugawa Ienari, the retired shogun, who still held the real power behind his son, and it was going to him privately, outside the formal channels of presentation.

Hara Yōyūsai, the leading lacquer artist in Edo, had made it. He had worked for the Doi family since 1797. The cabinet was small enough to carry, fitted with drawers, and scattered with Doi's crystals in gold, and he had finished it the month before. Senseki's diary follows it day by day. Two days before it left he had called on a nurseryman at

Mukōjima, a man with connections inside the retired shogun's household, and arranged a private presentation, to go with a potted pine. The next day the cabinet was taken out and examined in the upper room of Doi's quarters, and the day after that it left by lantern. Two days later the retired shogun sent Doi a fold of fresh sea bream. Senseki wrote the gift down and added a guess of his own: it came "perhaps because this morning's private presentation of the snowflake cabinet went well."

The curator of the Koga museum reads the cabinet as part of a campaign to get Doi onto the inner council. If so, it worked. In December that year Doi was appointed to the council of the shogun's main castle. The cabinet is lost. As the same curator wrote in 2011, it has not come down to us, and no picture of it is known.

There had been others. In 1838 the domain sent the retired emperor in Kyoto a flute case of red wood with twenty-five snowflakes in gold lacquer, fittings of solid gold by the metalworker Gotō Ichijō, and a brocade bag to carry it in. Nobody knows where it is. Later that year the domain gave away a tea bowl with snowflakes on it that Doi had fired himself, along with a jar of tea. That bowl has not been traced, though other bowls of his survive, as chapter 12 tells.

By 1840 Koga, like many domains, was short of money. The Hosokawa, the lords of Kumamoto and relations of the Doi by marriage, agreed to lend it 2,000 ryō in gold. Some weeks before, Senseki had sent the Hosokawa heir a gift of fresh sea bream. When the loan was settled, Yōyūsai delivered six snowflake inrō, the small lacquered cases worn hanging from the sash, with six matching netsuke. Two of the inrō went to the Hosokawa, who sent back cloth for formal trousers, and one of those two is still in the Hosokawa family's museum in Tokyo, the Eisei Bunko. Later that year the domain owed money to a merchant named Ōtsuya. Senseki asked him for more time and gave him a snowflake inrō, with sake and food. The Koga curator calls the inrō Senseki's trump card.

Senseki gave the book away the same way for a dozen years. On a tour of the domain's western lands in 1835 he left copies along his route. A shrine priest, he noted, earnestly wished for one; a village official's son got another, and in the same entry Senseki wrote that the barley looked good. In 1837 two copies went to Kyoto in the same parcel as a box of *shirauo*, the small white fish kept for the shogun's table, and in 1844 another went with a jar of rock sugar. An interpreter at Nagasaki who was sent the sequel replied with theriac, a Western remedy then prized as a cure for almost anything. Copies went to the emperor, to the shogun, to Shimazu Nariakira, the lord of Satsuma, and to Senseki's eye doctor. A student at Satō Issai's school asked for the sequel and got it, then came back three months later for the first volume, and got that too.

GIFTS AND POLITICS

Samurai gift-giving ran on strict conventions. What was given, how it was wrapped, who carried it, and what came back were all read closely. A lord did not ask for promotion outright. His household sent something fine through the proper channel and waited for the reply. Fresh fish from a superior was an honour. The snowflake was a gift only Doi could give: his own design, made up by Yōyūsai in lacquer and by Gotō Ichijō in gold.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 46–47



CHAPTER 09

The Council

Six years at the top of the shogun's government, from second seat to the head of the table and out.

1839	Takes a full seat on the council
1842	Made councillor for coastal defence
1843	Turns against Mizuno over the land decree
1843	Head of the council
1844	Fire destroys Edo Castle's palace; Doi withdraws and resigns

Opposite: Minamoto Raikō and the Earth Spider, by Utagawa Kuniyoshi, a design of 1843 read at the time as a satire of the shogun's councillors. Los Angeles County Museum of Art.

On the 6th day of the 12th month of 1839 Doi took a full seat on the *rōjū*, the senior council that governed Japan in the shogun's name. He had joined it the year before in a lesser post. Seven months earlier his domain had sent a snowflake cabinet privately to the retired shogun, and the Koga museum's curator reads the gift and the promotion as cause and effect.

The leading member of the council was Mizuno Tadakuni, and Doi sat second to him. In 1841 Mizuno launched the Tenpō Reforms, a harsh attempt to repair the government's finances and the nation's morals by forcing people to live frugally. Luxury was banned: costly clothes, elaborate food, the popular theatre, and expensive

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 48–49

prints. In 1842, under these rules, Edo's two most famous sushi makers were arrested for selling sushi judged too extravagant, as chapter 11 tells. Doi sat on the council while this happened. No source connects him with the order; the reforms were Mizuno's, and the town magistrates carried them out. The dictionaries say only that Doi at first supported them.

One part of the reform government did carry Doi's name. In the 7th month of 1842 he and Sanada Yukitsura were made the council's officers for coastal defence. That summer, with news of Britain's war on China, the shogunate replaced its order to fire on foreign ships with one allowing them firewood and water, and the notices explaining the change, warning that it did not permit any dealings with foreigners, went out under Doi's name alone. Sanada noted at the time that this was how it had been arranged.

In 1841, just as the austerity campaign began, Doi had a pair of swords made for himself, with fittings decorated in his own snowflakes. Koga City bought them in 2023, and they are the only object known for certain to have been made to his order. In the 4th month of 1843 he received the shogun Ieyoshi at Koga Castle, on what proved to be the last of the shoguns' pilgrimages to the shrines at Nikkō.

That summer Mizuno overreached. On the 1st day of the 6th month he decreed that the lands within ten *ri* of Edo, and a fortnight later those around Osaka, be taken from their lords and placed directly under the shogun. Doi's villages in Kawachi and Settsu lay inside the Osaka zone, and his house owed those villagers money. They feared the debt would vanish with the land, and they petitioned Doi again and again. He turned against the decree and became the figurehead of its opponents, joined by the great Tokugawa house of Kii and by the women's quarters of the castle. One secondary account says that Mizuno's own lieutenant, the Edo magistrate Torii Yōzō, changed sides and passed Mizuno's papers to Doi. On the 7th day of the intercalary 9th month the order withdrawing the decree went out from Doi, with Mizuno absent. Six days later Mizuno was dismissed, and Doi, as senior councillor with charge of finance, was head of the government.

The streets enjoyed it. Satirical verses of 1843 and 1844, copied into the diaries of townsmen in Edo and Osaka, credit "the old man of Koga" with settling Mizuno's scheme and play on Doi's crest, a wheel, pulling down Mizuno's water-plantain. They contrast "bad-law-scribbling Echizen," Mizuno, with "good-hearted Ōi," Doi, and one sumo-ranking parody calls him "the willow nobody touches." Utagawa Kuniyoshi's print of Minamoto Raikō and the Earth Spider, published in 1843, was read by one Osaka chronicler as the four councillors guarding a sleeping shogun while demons swarm overhead. The guardian he identified as Doi sits drinking his tea, "never dreaming of Mizuno's wickedness." The verses mock him for mildness and nothing worse. None of them mentions snow.

Doi's headship was short. In the 5th month of 1844 fire destroyed the palace of Edo Castle's main enclosure, the shogun's residence among it, and Doi was put in charge of the rebuilding. The money was to come from the lords, and it did not come. Doi stopped attending the castle "on grounds of illness." On the 13th day of the 6th month the rebuilding passed to the young councillor Abe Masahiro, and on the 21st the shogun recalled Mizuno to the head of the council. Doi never attended again, and he left office that autumn; the dates given are the 9th month and the 12th day of the 10th. A Dutch warship carrying a letter from the king of the Netherlands, urging Japan to open its ports, reached Nagasaki in the 7th month, after Doi had withdrawn.

The townspeople's verdict, and the Kariya curator's, is that he was a gentleman rather than a reformer: well born, mild, never accused of oppressing anyone, and unable to stop policies he disliked until his own lands were touched. Kariya remembers him as a man who steered the country through "troubles at home and threats from abroad."

THE TENPŌ REFORMS

The Tenpō Reforms of 1841 to 1843 were the shogunate's answer to famine, debt, and unrest: make everyone live simply. They restricted dress and diet, closed or moved theatres, and censored popular fiction and prints. They were hated and did not last. Mizuno was dismissed in 1843, and most of his programme went with him.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 50–51



Yotsu performing as a shirabyōshi dancer, by Gochōtei Sadahiro, 1841; the patterns on her trousers may be sekka. The Metropolitan Museum of Art.

CHAPTER 10

Ōi Moyō

How a lord's book of natural science became the fashion of Edo.

1832	The book is printed
1838	Kunisada prints a beauty against a ground of true crystals
1840	Snowflakes on clothing, towels, and sweets, by a contemporary account
1893–1914	A Kyoto potter makes dishes in the "sekka style"

Doi's book was never sold, yet within eight years his snowflakes were everywhere: on kimono and sword fittings, horse trappings and decorated papers, letters, cotton hand towels, and sweets. The people of Edo called the pattern *Ōī moyō*, "the Ōi pattern," after Doi's court title of Ōi-no-kami, and called him *Yuki no Tonosama*, the Snow Lord. The museum at Kariya explains that the nickname stuck because his crystals were on prints and clothing, so ordinary people knew him for them and for nothing else.

> People dye snow flowers on the clothes they wear morning and evening, and on hand towels, and at last even make them into the shape of sweets.
>
> — Honma Yūsei, afterword to the sequel, 1840

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 52–53

Honma Yūsei wrote that line for the sequel in 1840. It is the best witness we have from the time, and he adds that high and low, old and young, prized the snowflakes alike. The prints of the period back him up. In 1838, six years after the book, the leading print designer Utagawa Kunisada published a picture of a fashionable young woman with a folding fan and a hand mirror, set against a ground full of true crystals: hexagons and branching stars that seem to come straight from Doi's plates.



Woman with a Folding Fan and Hand Mirror, by Utagawa Kunisada, 1838. The ground is filled with true sekka, six years after Doi's book. The Metropolitan Museum of Art.

Some years later Kunisada illustrated a famous poem, the fifteenth in the classical anthology *One Hundred Poets, One Poem Each*. The Emperor Kōkō wrote it more than a thousand years earlier, to go with a gift of spring greens:

> For you, I went out to the spring
> fields to gather young greens, and
> on my sleeves the snow kept falling.
>
> — Emperor Kōkō, *Hyakunin Isshu* no. 15 (our translation)

Kunisada's picture shows a woman bracing her umbrella against the falling snow, in a kimono printed with crystals.



Kunisada's illustration of Emperor Kōkō's poem, c. 1844, with crystal roundels on the kimono. The Metropolitan Museum of Art.

Snow was in Japanese design long before Doi, but in a different form. The older motif is the *yukiwa*, or "snow ring," a soft, scalloped circle like a flower or a cloud, found on kimono of the seventeenth century, some 150 years before his book. Doi's *sekka* are true hexagonal crystals with straight, branching arms. A design with the six-armed branching star goes back to his plates; one with the scalloped ring belongs to the older tradition.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 54–55





The older yukiwa, for comparison. Left, a fragment of a kosode, seventeenth century; right, an Awata ware water pot, c. 1850–60. The Metropolitan Museum of Art.

The name lasted long after Doi, even where his drawing did not. Late in the Meiji era, between 1893 and 1914, the Kyoto potter Seifū Yohei III made a set of six small side dishes, of the kind served alongside a meal: white inside, bright pink outside, with a six-lobed rim traced in brown. On the lid of the box he wrote the style: 雪花式, "sekka style." Seen from above, each rim is a snowflake. It is a soft, scalloped one, closer to the old snow ring than to Doi's branching crystals.



Snow-Flake Side Dishes, by Seifū Yohei III, 1893–1914. Porcelain, each 13.5 cm across. Cleveland Museum of Art.





Left, one of the dishes seen from above. Right, their box, of plain wood tied with a purple cord. Cleveland Museum of Art.

The dishes came in a plain wooden box, tied with a cord, that Seifū signed himself. Japanese potters still make such a box for their best work, and it travels with the pieces as their proof. On top he named the set; under the lid he wrote "made by Seifū" beside an oval seal that reads Imperial Household Artist, the title the court gave its leading craftsmen.





Left, the top of the lid: 雪花式 向附, "sekka-style side dishes," with Seifū's seal. Right, the underside: 清風造之, "made by Seifū," and the seal 帝室技芸員, Imperial Household Artist. Cleveland Museum of Art.

In Koga the snowflake is now the emblem of the town. It is on the badges of the city's elementary schools, on street lamps, and in the brickwork of the pavements; some of the road humps are shaped like crystals; and the city's development company is called Sekka. Koga honours the pattern more than the man. We have found no statue of Doi and no festival in his name.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 56–57



A snowflake side dish by Seifū Yohei III, 1893–1914, one of a set of six. Cleveland Museum of Art.

CHAPTER 11

Food in Doi's World

The birth of nigiri, the shogun's fish, castella by the box, and sweets in the shape of snow.

1818–30	Nigiri sushi appears in Edo
1824	Hanaya Yohei opens his shop at Ryōgoku
1836–37	A glut of tuna makes soy-marinated tuna a topping
1842	Edo arrests its makers of luxury sushi

Nigiri sushi, the kind now eaten all over the world, was born in Doi's lifetime and in his city. Before the nineteenth century, sushi in Japan was mostly pressed or fermented: fish and rice packed into boxes or tubs and left to cure for days. In the Bunsei era, between 1818 and 1830, Edo cooks began shaping a little vinegared rice by hand and laying a slice of fish on it, to be eaten at once. It was sold from stalls and small shops.

Who made it first is still argued over. The name most often given is Hanaya Yohei, who opened his shop at Ryōgoku in 1824, but that claim was first written down in 1907. A book written in 1830, while the change was happening, credits a rival, Sakaiya Matsugorō of the shop called Matsu-ga-zushi. Either way, within a few decades an Edo writer could say the city had given up box sushi altogether and ate "only nigiri."

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 58–59

That writer's great encyclopedia of city life, *Morisada Mankō*, shows the nigiri of the day. The toppings were *kohada*, a small silvery fish cured in vinegar; *anago*, sea eel simmered in a sweet sauce; *shirauo*, tiny white fish, also simmered; *tamago*, a sweet omelette; and shrimp. After a glut of tuna off Edo in 1836 and 1837, tuna marinated in soy sauce, known as *zuke*, joined them. Most fish was cured, simmered, or marinated rather than served raw, and wasabi went only with the tuna and the kohada. A piece cost about 8 mon, and the omelette 16, because eggs were dear. At the top of the trade, Matsu-ga-zushi charged about 250 mon a piece, and people said its egg looked like gold and its fish like crystal. Samurai households ordered from the best shops, and lords sent boxes of sushi as gifts.

In 1842, under the Tenpō Reforms, the authorities arrested Hanaya Yohei and the owner of Matsu-ga-zushi for charging too much, and one writer of the time recorded more than two hundred sushi sellers taken away in handcuffs. Doi was on the governing council then, as chapter 9 tells, though no source connects him with the arrests.

Two fish come up again and again in the story of Doi's household. Sea bream, *tai*, was the fish of celebration and honour. When the retired shogun wanted to show his favour after receiving the snowflake cabinet in 1839, he sent Doi fresh sea bream, and when Senseki wanted to prepare the ground for a loan, he sent sea bream to the lenders. The second, *shirauo*, a tiny, almost transparent fish, belonged in a special way to the shogun. The fishermen of Tsukuda island in Edo Bay delivered it to his table as tribute between November and March, in official boxes, one of which survives. In 1837 Senseki packed a box of shirauo in the same parcel as two copies of Doi's book.

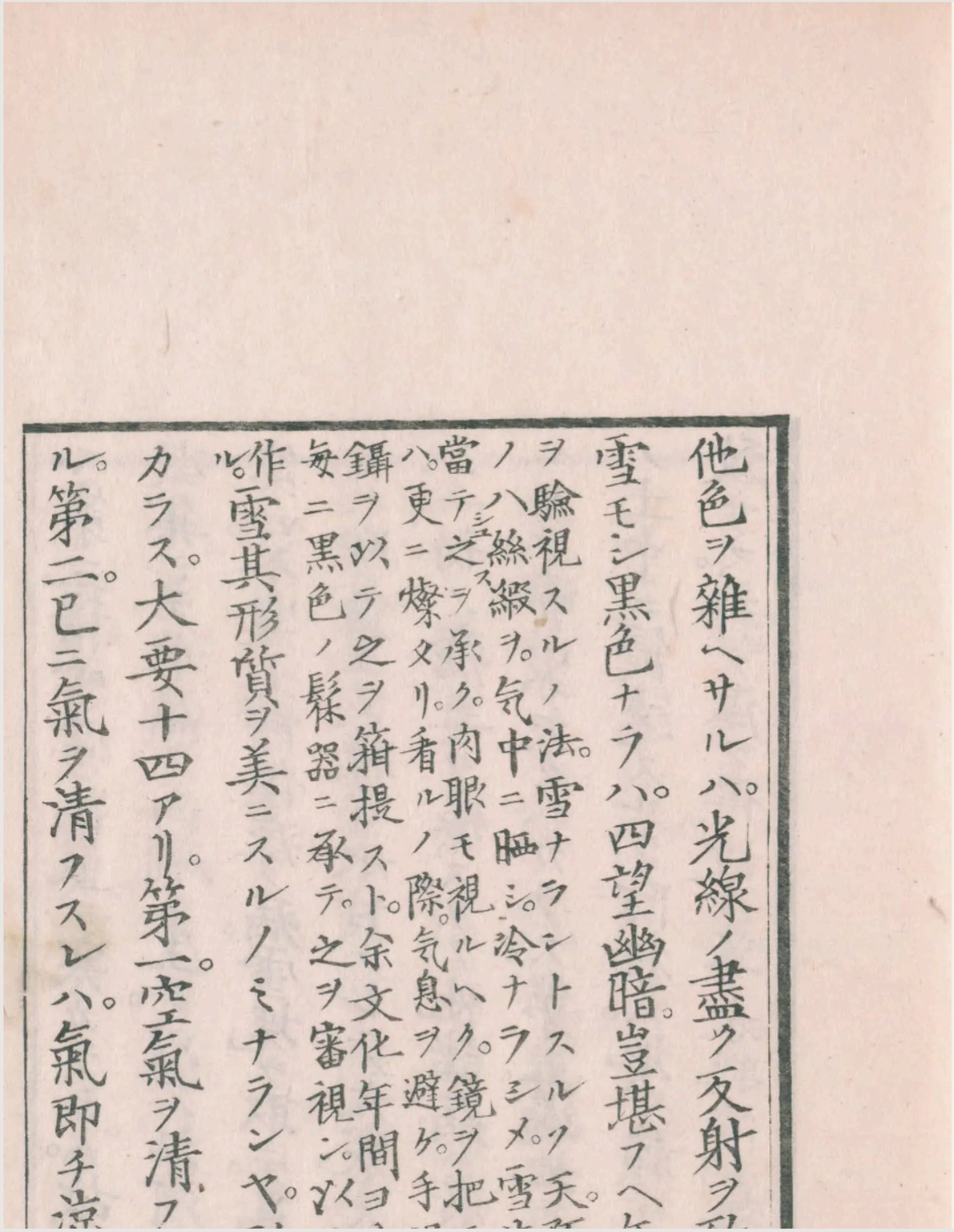
One of Doi's fourteen uses of snow was about food: ice and snow stored in pits, he wrote, keep meat and fish from spoiling through the summer and cool drinks for feasts. This was real technology in his day. Every summer, on the first day of the 6th month, the great domain of Kaga sent packed snow and ice from its ice houses to the shogun, carried by relays of runners over four days and nights.

Senseki's diary is full of gifts of food. The most frequent is castella, the sponge cake brought to Japan by Portuguese traders in the sixteenth century, which turns up more than sixty times under nine different spellings. Some came from famous Edo confectioners; some were baked in the domain's own kitchen as winter gifts. Eggs did the same job: in 1824 the domain sent 3,500 hen's eggs from Koga to Edo, where they were handed out by the hundred to lords and scholars.

By 1840, according to Honma Yūsei, people had begun to make Doi's snowflakes "into the shape of sweets," and Koga City records that Doi had the 雪華 design carved into moulds for *oshigashi*, pressed sweets made by packing sugar and rice flour into a wooden mould and knocking the shape out. The moulds are lost. The diary also names a box of sweets called *Mutsu no hana*, "six-petalled flower," a poetic name for snow, bought in 1851; what kind of sweet it was is not known, though a pressed sugar sweet seems most likely. Another sweet in the diary is still made: *Koshi no yuki*, "Snow of Koshi," small white cubes of winter-cured rice flour and fine sugar that melt on the tongue like snow. Its maker, Yamatoya of Nagaoka, was founded in 1778 and sells it today.

Did the Snow Lord eat sushi? We don't know. Nothing in the transcribed parts of Senseki's diary mentions it. Doi lived in Edo while nigiri was being invented a short distance away, and samurai households certainly ordered it, so he may well have. But nobody wrote it down, and this book will not claim it.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 60–61



CHAPTER 12

The Private Man

Paintings, tea bowls, a studio named for the winter sun, and the summer of 1848.

1832	Rebuilds the main hall of Shōjō-ji, the year of the book
1838	His first adopted heir is set aside
1848	Retires in the 4th month; dies on 31 July
1848	His heir dies seven weeks later
1927	The family graves are brought to Koga

Opposite: *Sekka Zusetsu*, 1832, a page of Doi's own preface.

Few of Doi's private papers survive, and the curator at Kariya warns that the official records of a councillor rarely show what he thought. What remains of the man himself is mostly in things he made.

He painted. The Koga City Museum of History holds a Mount Fuji in ink and gold on silk, a Koga City Cultural Property, a laughing Hotei with an inscription in Doi's hand, and sparrows in bamboo. Shōjō-ji, the Doi family's temple in Koga, keeps a fan he wrote on, a poem slip, and a piece of his calligraphy. No poem of his has yet been published.

He also made tea bowls. The domain gave one away in 1838, and that bowl has not been traced, but others survive. Three bowls attributed to him, among them a black raku bowl described as "fired by his own hand," are on deposit at the Koga museum

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 62–63

from the papers of a local family. Another black raku bowl, at the Sanada Treasure Museum in Nagano, carries a picture of Mount Fuji and a poem in white by Sanada Yukitsura, Doi's colleague on the council. Raku bowls made by lords were a known kind of gift in this period; the Sanada collection holds one by a lord of Mito as well. Mount Fuji appears on the painting at Koga and on the bowl in Nagano, and it seems to have been one of his subjects.

The studio name under which he published, the Aijitsu-ken, has two possible sources in the Chinese classics. One is the saying that a filial son "loves the days," the days remaining with his parents. The other is a line from the *Zuo zhuan*, "the winter sun is to be loved." Either would suit him: the adopted heir of a house he had to honour, and a man who watched for snow. He never said which he meant.

Some of his purchases can be followed. Senseki's diary describes testing telescopes from the Dutch shop at Nihonbashi before buying them. Senseki climbed the heights at Yushima, found the air too hazy, then went on to the Kanda Myōjin shrine and stayed so long that the gate was shut and a priest had to let him out. Another entry records a Dutch book he longed for, priced at three gold *ryō*, which he could not afford. In the year of the book, 1832, Doi rebuilt the main hall of Shōjō-ji.

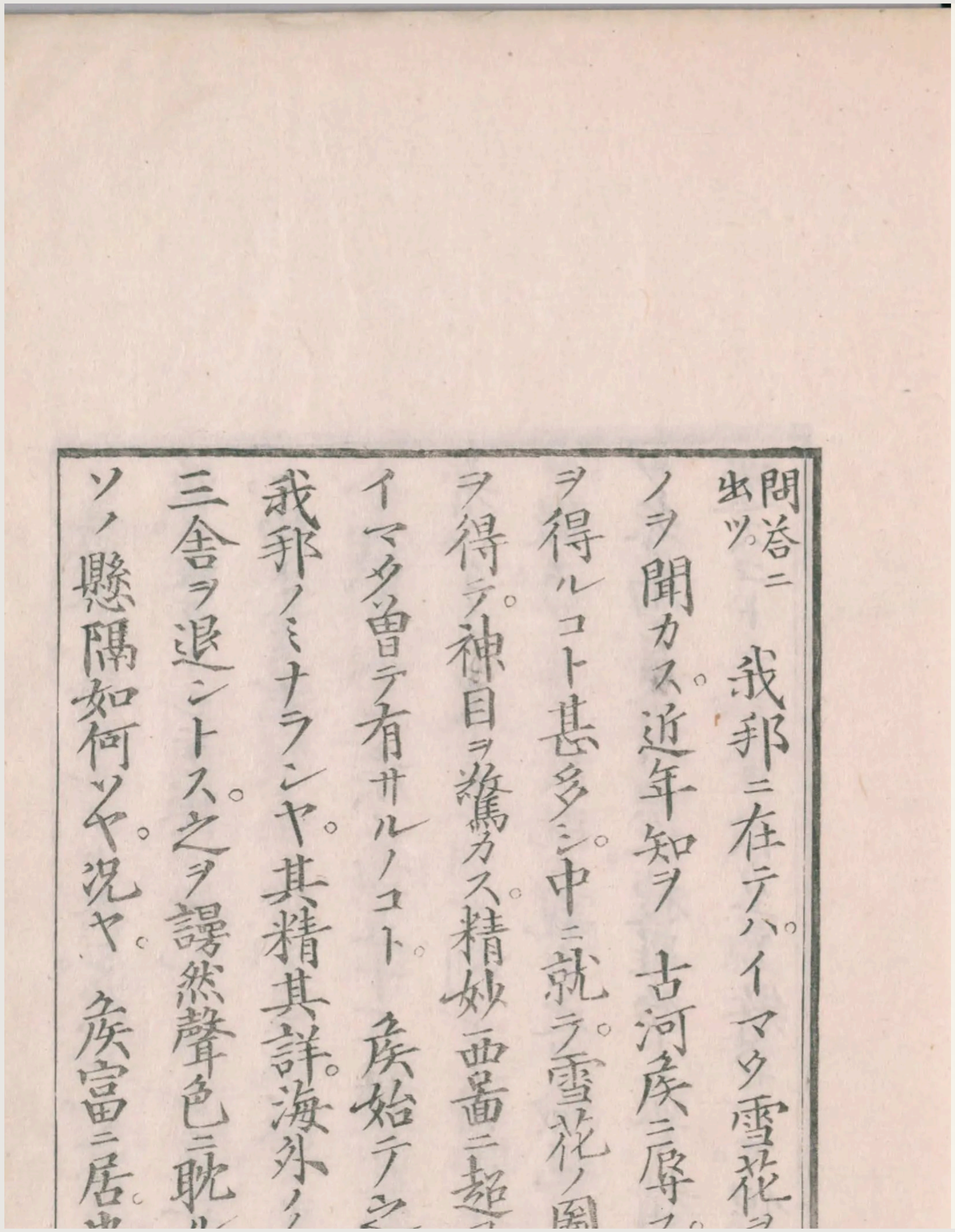
By one uncited account, Doi married a niece of his adoptive father, adopted into the Doi house for the purpose, as was usual when a house brought in an heir from outside. Nothing else is known of her. They had a daughter. Doi's first adopted heir, from the house of Toda, was set aside for illness in 1838, and a second was adopted from the Sakai house of Tsuruga the following year.

On the 25th day of the 4th month of 1848 Doi gave up the headship of the house to this second heir. He died on the 2nd day of the 7th month, 31 July 1848, at sixty by the Japanese count. The heir died on the 24th of the 8th month, seven weeks later, and the house passed to a boy of seventeen adopted from the Tōdō. Doi's own line went on through his daughter. Her son, Doi Toshitomo, born in 1851 at the family's Edo residence at Hibiya, was the last lord of Koga. He submitted to the new imperial government in 1868, became a viscount in 1884, and died in 1929.

Doi was most likely buried at Seigan-ji in Asakusa, the family's temple in Edo, where Senseki had gone in 1837 to report the end of Ōshio on his lord's behalf. In 1927, when the rebuilding after the Great Kantō Earthquake forced Seigan-ji to move, the Doi family graves, more than seventy of them, were brought to Shōjō-ji in Koga. The temple's black gate is the gate of the family's former Edo residence at Hongō, moved there in 1933. Koga Castle itself was pulled down in 1873 and 1874, and the river works of the early twentieth century carried away the ground it stood on.

PART THREE

Afterlife


問巷ニ出ツ。
ノヲ聞カス。近年知ヲ古河侯ニ辱ク
ヲ得ルコト甚多シ。中ニ就テ雪花ノ圖
ヲ得テ。神目ヲ驚カス精妙画ニ超
イマダ曽テ有サルノコト。侯始テ
戎邦ニ在テハ。イマダ雪花ノミナラン
三舎ヲ退ントス。之ヲ譚然聲色ニ耽
ソノ懸隔如何ソヤ。況ヤ。侯富ニ居

CHAPTER 13

The Rediscovery

How a private book of 1832 was reprinted, forgotten, found again, praised, and questioned.

1862	Ōtsuki Bankei has the book recut
1929	A journalist reintroduces it
1939	Nakaya Ukichirō tests it against photographs
1968	The first facsimile, with Kobayashi Teisaku's commentary
1997	Suzuki Michio argues it has been overrated

Opposite: *Sekka Zusetsu*, 1832, a page of the afterword.

Doi's book outlived the fashion it started, but only just. After 1848 the snowflake pattern went on appearing in prints and on porcelain, as chapter 10 tells, while the book itself, never sold and always scarce, passed out of common knowledge. Its first revival came in 1862, when the scholar Ōtsuki Bankei had it recut on new woodblocks. Bankei had known Senseki: in his last years, confined to his house at Koga, Senseki received visitors on the embankment of the Watarase River, and his diary records Bankei among them. Nakaya Ukichirō thought this the reason for the reprint.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 66–67

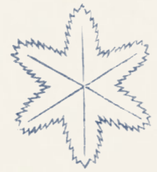
For the next sixty years the book was known mainly to collectors and to Koga. In 1929 a journalist, Kanō Ichirō, introduced it to a wider public in a book called *Ice and Snow*. Nakaya, a physicist at Hokkaidō Imperial University who had begun the systematic study of snow crystals, drew on Kanō's history for his own popular book of 1938 without at first saying so; a later printing added the credit after Kanō objected.

Nakaya's two essays on Doi, published in 1939 and 1940, made the book respectable as science. He worked from the 1862 recut, and his test of the drawings against his own photographs, told in chapter 4, is the one every later writer cites. Through an introduction to the head of the Doi house he learned that the family still kept the fair-copy drawings for the blocks, and from Senseki's descendants he heard the stories of the telescopes and of the microscope lent to a prince. He also raised, without settling it, the question of whether the book was really Senseki's.

The first facsimile, of both volumes, appeared in 1968, with a commentary by Kobayashi Teisaku of the Institute of Low Temperature Science at Hokkaidō, whose own work on how snow crystals grow made him the natural editor. He revised it in 1982. In 1986 Minakawa Saburō privately printed an English translation, made from the 1862 recut; it is held by two Japanese university libraries and we have not seen it. The Koga City Museum of History, which opened in 1990, made the book the centre of its collection and of its first exhibition on snow, five years later. In 2022 Aburakawa Hideaki published a modern Japanese translation of both volumes, free to read.

Not every scholar has agreed with Nakaya. In 1997 Suzuki Michio of Tohoku University argued that the book's scientific value had been overrated without close examination. Doi recorded no temperatures and no sizes, Suzuki pointed out, explained no process of growth, sorted his crystals into no types, drew only flat plates, and followed Martinet without question. Nakaya admired the book, Suzuki observed, but never used it in his own research. Its real legacy, in his view, was in design, on cloth and letter paper. Both judgements can be true. Doi's drawings are accurate, as Nakaya showed; they are records rather than analysis, as Suzuki says; and their largest effect was on what people wore.

Doi has also had a second life on screen and in fiction. In the samurai film *13 Assassins* he is the stern senior councillor who quietly orders the killing of the shogun's cruel half-brother, a story set in 1844, the year Doi in fact left office. He was played by Tamba Tetsurō in the original film of 1963 and again on television in 1990, by Hira Mikijirō in Miike Takashi's remake of 2010, and by Satomi Kōtarō for NHK in 2020. Two novels have been written about him, Saijō Naka's *Rikka rakuraku* (2014) and Takai Rei's *Yuki no tonosama* (2015).



THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 68–69



CHAPTER 14

What Survives

Where the Snow Lord's world may still be seen, and what has been lost.

2023	Koga City acquires Doi's snowflake swords
2024	An exhibition at Kariya brings together sixty-six objects
2026	Koga's exhibition shows the snowflake inrō

Opposite: The cover of the National Diet Library's copy of the 1832 first edition.

To stand where Doi stood, go to Koga, about an hour north of Tokyo by train. The Koga City Museum of History holds the core of his story: a copy of *Sekka Zusetsu*, designated an Important Cultural Property; a snowflake inrō by Hara Yōyūsai; snowflake sword guards; a formal garment patterned with sekka; letters written on paper decorated with snowflakes; and the staff carried at the capture of Ōshio. It keeps his own paintings, among them a Mount Fuji in ink and gold on silk, and has on deposit three tea bowls attributed to his hand; a fourth, a black raku bowl with a poem by his colleague Sanada Yukitsura, is at the Sanada Treasure Museum in Nagano. It also has the papers of Takami Senseki, more than three thousand items including his diary, together designated an Important Cultural

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 70–71

Property. Senseki's thatched house is next door, and the Doi family graves, moved from Edo in 1927, are at Shōjō-ji, about a kilometre from Koga Station.

In 2023 Koga City bought the pair of swords made for Doi in 1841 by the smith Koyama Munetsugu, their fittings decorated with snowflakes. They are the only object known for certain to have been made to his own order. The Koga curator counts four snowflake inrō by Yōyūsai as surviving and has traced three: one at Koga; one in the Hosokawa family's Eisei Bunko in Tokyo, the gift that went with the loan of 1840; and one in the Seikadō Bunko, also in Tokyo. Doi's portrait belongs to Shōjō-ji, and Kazan's portrait of Senseki is a National Treasure in the Tokyo National Museum. The letter Doi wrote on succeeding to Koga in 1822 is a Koga City Cultural Property, and in 2024 the museum at Kariya acquired two more letters in his hand.

The snowflake cabinet given to the retired shogun in 1839 is lost, and no picture of it survives. So are the flute case made for the retired emperor in 1838, the snowflake tea bowl the domain gave away that year, and the moulds his snowflakes were pressed from. So is the lens. In 1939 Nakaya Ukichirō reported that the Takami family had lent the Dutch microscope to an imperial prince who was abbot of the Ninnaji temple; a letter of thanks and a tea bowl sent in return survive, but the instrument does not. A period microscope shown at the Koga museum is said to have been used, but nothing records that it is the same one.

The table below lists the objects we have traced. It comes straight from our research and is updated whenever that research changes.

OBJECT	WHERE	STATUS
Sekka Zusetsu	Koga museum	Important Cultural Property
1832 first edition, scan	NDL pid 2536975	public domain, IIIF
1862 recut, scan	NDL pid 2536974	public domain, IIIF
Main and sequel set	Tokyo National Museum QB-9811	CC BY 4.0 image
Katsu Kaishū copy	Printing Museum, Tokyo, 75371	
Snowflake maki-e inrō, Hara Yōyūsai	Koga museum	Important Cultural Property; shown 2026
Snowflake maki-e cabinet (雪花蒔絵御箪笥), Hara Yōyūsai, 1839, given to the retired shogun	—	lost, per Koga's curator; no image or drawing known
Snowflake inrō given to the Hosokawa with the 1840 loan	Eisei Bunko	shown 2022
Snowflake inrō with mirror-lid netsuke	Seikadō Bunko	shown 2016
Flute case for the retired emperor, 25 snowflakes, 1838	—	whereabouts unknown
Doi's daishō swords, 1841, Koyama Munetsugu, snowflake fittings	Koga City, bought 2023	only craft object confirmed made at his order
Snowflake tsuba, 雪華 kamishimo, letters on snowflake paper	Koga museum	
Portrait of Doi	Shōjō-ji, via Koga museum	
Kazan's portrait of Senseki	Tokyo National Museum A-9972	National Treasure
Letter on his succession, 1822	Takami papers, Koga	Koga City Cultural Property
Two Doi letters (to Atobe, to Katagiri)	Kariya City History Museum, bought FY2024	
Takami Senseki papers, about 3,150 items	Koga museum	Important Cultural Property
Ōshio capture staff	Koga museum	
Snowflake tea bowl Doi fired	—	none known to survive
The microscope (蘭鏡)	—	lost
Snowflake sweet moulds	—	lost

Two recent exhibitions have brought these objects together. Kariya, Doi's birthplace, gave him an exhibition from 5 October to 17 November 2024, with sixty-six objects and a sixty-four-page catalogue. The Koga museum followed with its own, *The Snow Lord, Doi Toshitsura*, from 14 March to 6 May 2026, which showed the snowflake inrō for the first time in eight years.

THE SNOW LORD — PROOF 5 — 31.10.2026 — PP. 72–73


解シ。寒ヲ禦ク。天地ノ神工。固ヨリ偶然ニ非ス。路上ノ積雪。我儕コレヲ踢過スルカ如キ。豈奉戴ノ意ヲ存セサルヘケンヤ。

壬辰夏六月

許鹿 源利位 述

AFTERWORD

A Note on the Evidence

The sources behind this history, the stories it leaves out, and the questions still open.

Opposite: *Sekka Zusetsu*, 1832, the close of the text, with the seal of Doi's studio.

Throughout this book we have tried to show where each statement comes from. Here is how we have weighed that evidence.

The strongest evidence is primary: documents written at the time by people who were there. That means Doi's own book, with its prefaces and afterwords, and Senseki's diary. Even these have limits. A diarist records what he chooses to, and Senseki was loyal to his lord. Next come the records of the institutions that hold the objects: the Koga City Museum of History, the Tokyo National Museum, the National Diet Library, and the city of Koga. These are careful and generally reliable, though a city is entitled to some pride in its most famous son. After them come the scholars, dictionaries, and transcribers who have read the primary sources for us, among them Nakaya Ukichirō, Aburakawa Hideaki, and Akita Emi. We have relied on them and checked them where we could. Last comes tradition, what is said to have happened with no record from the time; where this book repeats a traditional story, it says so.

Several popular stories about Doi have no evidence behind them, and since they are often repeated, they are worth naming. It is often said that he observed that no two snowflakes are alike. His book does not say so; its nearest statement is that creation

"changes in a thousand ways, without end." It is said that he kept watch through the coldest nights. No source records it, and his method only required that the cloth be chilled when snow was expected. It is sometimes suggested that he ordered the arrest of Edo's sushi makers. He sat on the council at the time, but the reforms were Mizuno's, and no source names him. And it is often said that Senseki bought the microscope and that it can still be seen. No Japanese source records who acquired it, and the documented instrument was lent away and lost.

Some questions are still open. The only English translation of Doi's book we know of, Minakawa Saburō's of 1986, was made from the 1862 recut, printed privately, and is held in two Japanese libraries; we have not yet seen it, and every quotation here will be checked against it when we do. Suzuki Michio's critique of 1997 is known to us only from its abstract. Senseki's sixty years of entries are in print, but only parts of them have been searched, and a full reading for food, and for sushi in particular, could still turn something up. The sources disagree over whether the first volume was finished in 1832 or early in 1833; the sequel's own dates place it in the spring of 1840. Doi's poems, if he wrote any for others to read, have not been published, and the official chronicle of the shogunate has not yet been searched for the date he left office. A fourth snowflake inrō is known to survive but has not been traced, and the cabinet and the flute case may yet be sitting unrecognised in some collection. Which lens Doi used, who obtained it, and where it went are still unanswered.

This book is compiled from the research we keep on Doi and his world. When that research changes, the text is revised and the book rebuilt, and the copy in your hands is current to the date on its title page.

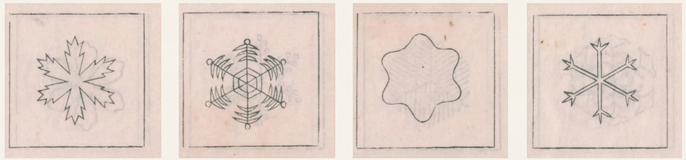
The Plates of 1832

Every crystal in the first edition of *Sekka Zusetsu* is reproduced here, in the order the book prints them and at the same scale as one another. The plates are read as a Japanese book is read: right page before left, and on each page the right-hand column from top to bottom, then the left. Numbers follow that order.

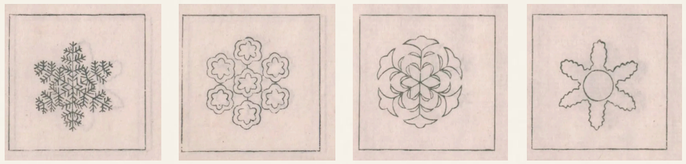
Doi gives no date for his first thirty-eight crystals. After them, a short note printed beside the first crystal of each group records the day the group fell and how many forms it contains. The last of Doi's groups, thirty-one crystals from the heavy snow of the 9th day of the 12th month, opens with a boxed note of its own and was added after both prefaces had been written. Nine frames on the last two pages of Doi's plates were left empty. The final twelve figures are those Doi copied from J. F. Martinet's *Katechismus der Natuur*; the plates themselves carry no label, and Takami Senseki's note introducing them ends "now I simply set out his figures to the left."

Dates are given in the Japanese calendar, as printed, with the Western equivalent. The plates are cut from the National Diet Library's scan of the first edition and are otherwise untouched.

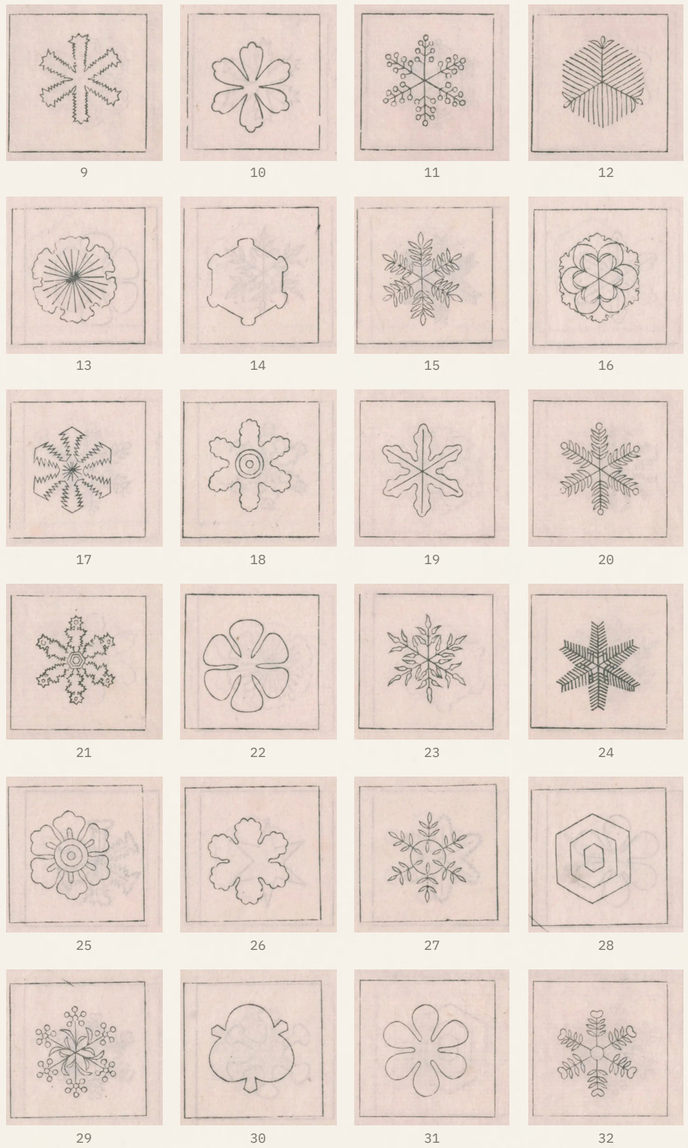
Undated

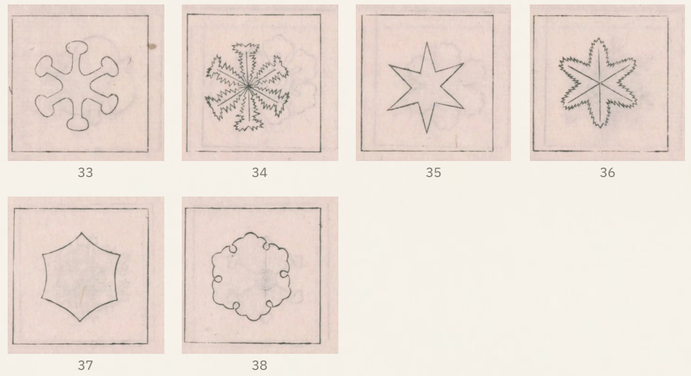


1 2 3 4



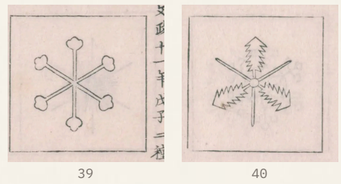
5 6 7 8





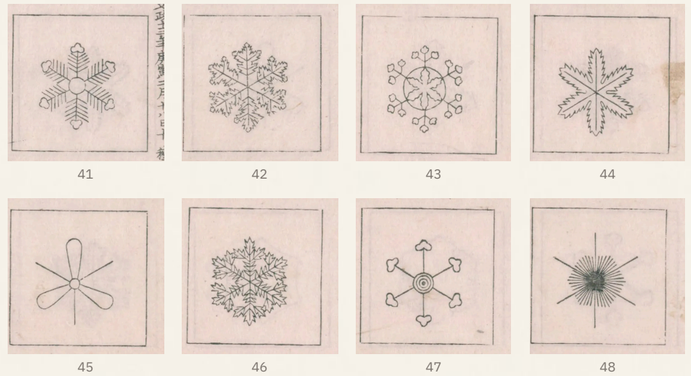
Bunsei 11 (1828), two kinds

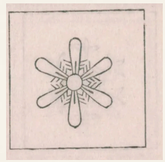
15 February 1828 – 3 February 1829 · 文政十一年戊子 二種



Bunsei 13, 2nd month, 18th day: ten kinds

12 March 1830 · 文政十三年庚寅二月十八日十種

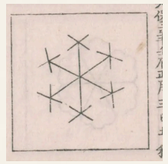



49

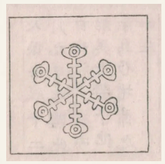

50

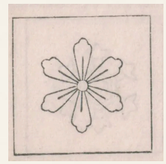
Tenpō 3, 1st month, 3rd day: five kinds

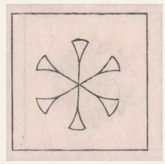
4 February 1832 · 天保三年壬辰正月三日五種


51


52

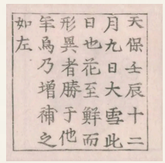

53


54

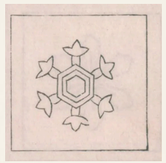

55

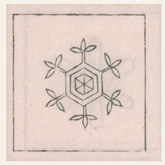
Tenpō 3, 12th month, 9th day: the heavy snow

29 January 1833 · 天保壬辰十二月九日大雪此日也花至鮮而形異者勝于他年焉乃增補之如左

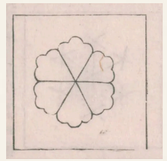


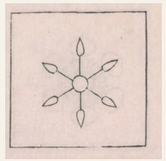
The printed note


56

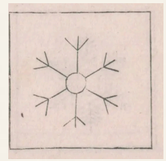

57

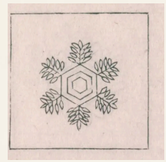

58

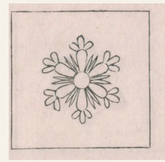

59

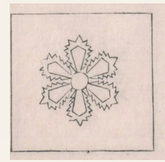

60

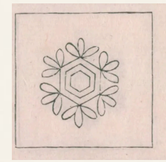

61

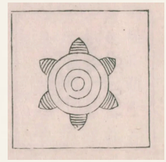

62


63

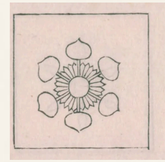

64


65

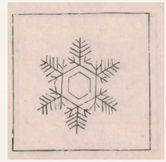

66

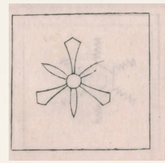

67


68

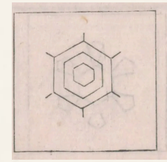

69


70

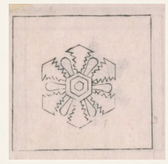

71

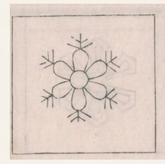

72

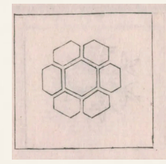

73


74

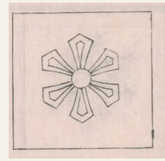

75

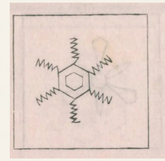

76

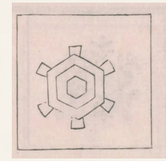

77

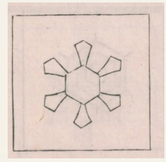

78


79

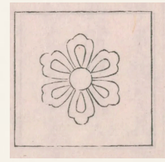

80

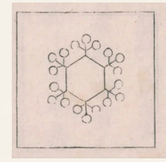

81


82


83

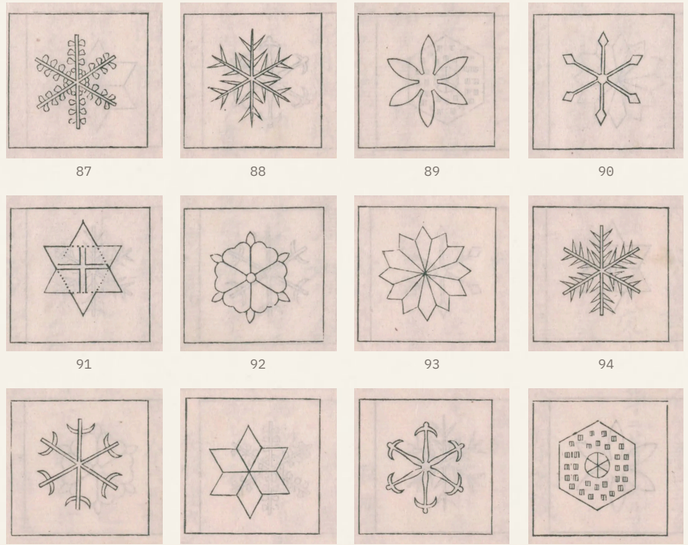

84


85


86

Twelve figures from Martinet

今只其圖ヲ左ニ列ス (Takami's note: “now I simply set out his figures to the left”)



Notes on the Sources

01 BLACK SATIN

Doi describes his method in the section of *Sekka Zusetsu* devoted to viewing snow (1832). The thirty-one forms, and the note that they were not seen in other years, appear on the book's dated plates. The figure of twenty years comes from the afterword by Takami Senseki. We have read these texts in Aburakawa Hideaki's modern Japanese translation (2022) and in the National Diet Library's scan of the first edition.

02 A FOURTH SON

The dates of Doi's birth, adoption, and offices are taken from Japan's standard biographical dictionaries and agree with the Japanese Wikipedia article on him. His father's family is from Kotobank and Japanese Wikipedia; the link to Hotta Masaatsu is made by Suzuki Michio (1997), and the snow manuscripts are in the Koga City Museum of History's checklist for its 2026 exhibition. The succession letter is a Koga City Cultural Property and is described in a newsletter of the Kariya City History Museum.

03 THE DUTCH SCHOLAR

Senseki's career and Dutch name are drawn from the Japanese Wikipedia article on him, the Ibaraki Prefecture board of education, and the Agency for Cultural Affairs. His part in the book follows Koga City's official account (2021); the question of authorship is raised in Nakaya Ukichirō's essay of 1939. The portrait's record is that of the Tokyo National Museum; the story of its making and the later dating are reported by Koga City and by the art historian writing for artscape. The diary was published in eight volumes between 2001 and 2004.

04 TWENTY WINTERS

The method, the theory of formation, the fourteen uses, and the quotations come from Doi's own text and from the prefaces and afterwords to both volumes, read in Aburakawa Hideaki's translation (2022). The debt to Martinet, the advantage of lacquer, the wording of the lens, and the test of accuracy are from Nakaya Ukichirō's two essays on the book (1939–40). The path of the six-around-one argument from the Chinese *Tianjing huowen* back through Jesuit writing to Kepler is traced by Sabine Kink in *Monumenta Serica* (2022), which we know through its citation in Japanese Wikipedia and have not yet read.

05 OTHER EYES

The European record follows Gustav Hellmann, *Schneekrystalle* (Berlin, 1893), read in full, with Descartes, *Les Météores* (1637), pp. 223–225, and Scoresby, *An Account of the Arctic Regions* (1820), vol. 1, pp. 430–431, read in the originals. The Glaishers' figures and method are from F. Winckel, *British Journal for the History of Science* 57 (2024), and the photographers' dates from Hellmann and from Bentley's biographers. The Chinese line is in *Yiwen leiju*, juan 2; it is not in the received text of the *Hanshi waizhuan*, and the date of 135 BC often given for it has no source we could find. The path of Doi's "six around one" through the *Tianjing huowen* is traced by Sabine Kink in *Monumenta Serica* (2022), known to us through its citation and not yet read. Nakaya's comparison is in his essay of 1939. Engelman's book has not been seen; whether he used a lens is unknown.

06 SNOW FLOWERS, ILLUSTRATED

The publication details and counts are from the National Diet Library, the Printing Museum in Tokyo, Koga City, and the Iwase Bunko library. The disputed dates of both volumes are recorded in Japan's standard dictionaries and in the Tokyo National Museum's catalogue; the sequel's dates are read from its own preface, postscript, and plates in the Shinshu University copy. The book's spread through *Hokuetsu Seppu* is described by the Public Domain Review and by Nakaya. The scans of 1832 and 1862 are National Diet Library items 2536975 and 2536974.

07 OSAKA AND KYOTO

Doi's appointments follow the dates in Japanese Wikipedia, which agree with the lists of officeholders and with Doi's own count of "four years at Osaka, a year at Kyoto"; one dictionary's date of 1835 for Osaka is set aside. The Koga domain's lands and debts around Hirano-gō are from Matsumoto Atsuhiro's 2018 Kobe University thesis. The course of the rising and the commendation letter are from Koga City and a 2022 article in the journal of the Ōshio society, whose text we have not read; the account of the arrest is the Koga museum curator's reading of Senseki's diary (2018). The Oiwake register was found by Fujikake Shizuya and is reported by Nakaya Ukichirō (1940). The irony of the famine is noted by the National Diet Library.

08 SNOWFLAKES AS CURRENCY

Every episode in this chapter is taken from the diary of Takami Senseki, published in eight volumes by Yoshikawa Kōbunkan (2001–04). The dated entries follow a careful transcription of the printed edition made in 2013 by the writer Akita Emi, with volume and page references; they can be checked against the printed volumes, which we have not yet done for all of them. The diary for 1832, the year of the book's publication, is missing. The interpretation of the cabinet as part of a campaign for promotion, and the description of the inrō as a trump card, are those of the Koga curator Nagamochi Toshihiko, who once gave the loan as 4,000 ryō; the diary records 2,000, and we follow the diary.

09 THE COUNCIL

The account of Doi on the council rests chiefly on Nagasawa Shinji, "Tenpō kaikaku-ki ni okeru rōjū e no shisen," *Bulletin of the Kariya City History Museum* 5 (2024), read in full: the coastal-defence appointment and the notices of 1842, the satires and their sources, and the fall in 1844. The land decree's dates and Doi's change of side are from the Nipponica encyclopedia and Inoue Katsuo's history of the period (2009), which is also the only source for Torii's leak. The Doi house's debts are from Matsumoto Atsuhiro's thesis (2018). The Nikkō pilgrimage is from the *History of Koga City*. The swords are documented by Koga City (2023). Whether Doi left office in the 9th or the 10th month of 1844 awaits the official chronicle.

10 ŌI MOYŌ

The range of objects on which the pattern appeared, and the name Ōi moyō, are given in Koga City's official publications. We have not found an Edo fashion book of the period that uses the name, which therefore rests on Koga's account and on later sources. Honma's sentence is from the sequel, read in Aburakawa's translation. The prints, the kosode, the water pot, and the dishes are in the open-access collections of the Metropolitan Museum of Art and the Cleveland Museum of Art. The distinction between sekka and yukiwa is our own reading of the designs, based on the Metropolitan Museum's dating of the kosode. The reading of Seifū's lid is also ours; the museum gives only its translation. The lid writes sekka as 雪花, with the everyday character for flower, as Takami Senseki's diary does for Doi's own snowflake gifts; Doi's title writes 雪華. No record connects Seifū with Doi.

11 FOOD IN DOI'S WORLD

The origins of nigiri, its toppings, and its prices are taken from Japanese food histories based on *Morisada Mankō* (written c. 1837–53) and on the writings of Kitamura Nobuyo in 1830 and 1842; not every quotation has yet been checked against the original texts. The shirauo tribute box is a cultural property of Chūō Ward, Tokyo. The castella, eggs, and sweets are from Akita Emi's transcription of the printed diary. The sweet moulds are recorded in a Koga City publication; no mould has been found.

12 THE PRIVATE MAN

The paintings and the bowls at Koga are from the Koga City Museum of History's checklist for its 2026 exhibition. The Sanada bowl is item 茶008-02 in the Nagano City digital museum. The relics at Shōjō-ji and the rebuilding of its hall are from Japanese Wikipedia, citing Koga City's 1993 survey of cultural properties and the *Ibaraki Encyclopedia*. The family is from Kotobank and Japanese Wikipedia; the account of Doi's wife is uncited there. The telescopes and the Dutch book are from a Takami descendant's account recorded by Nakaya Ukichirō (1940). The graves and the gate are from Koga City. Where Doi died, and the form of his present grave, are not recorded in any source we have found.

13 THE REDISCOVERY

The 1862 reprint and the meetings on the embankment are from Nakaya Ukichirō's essays of 1939 and 1940, read in full on Aozora Bunko, which also give the family papers and the Takami stories. Kanō's role and the matter of the credit are from Higuchi Keiji, Nakaya's student, writing for the Hokkaidō University Museum (2012). The facsimiles, Minakawa's translation, and the novels are from the National Diet Library and CiNii catalogues. Suzuki Michio's argument, "Sekka zusetsu saikō," *Bulletin of the Graduate School of International Cultural Studies, Tohoku University* 5 (1997), is known to us from its abstract; the full paper has not been read. The film's casts are from Japanese Wikipedia.

14 WHAT SURVIVES

The holdings described here are drawn from the Koga museum's checklist for its 2026 exhibition, from Koga City, from the annual report of the Kariya City History Museum, from the Agency for Cultural Affairs, and from the Tokyo National Museum. The loss of the cabinet is recorded in a statement by the Koga curator Nagamochi Toshihiko (2011). The account of the microscope comes from Nakaya's interview with the keeper of the Takami papers, published in 1939.

Timeline

YEAR	DOI AND HIS WORLD	JAPAN AND BEYOND
1611		Kepler writes on the six-cornered snowflake
1635		Descartes draws six-sided snow crystals in Amsterdam
1665		Hooke draws snow through a microscope
1747		Engelman pictures 420 crystals
1774		A Dutch anatomy book is translated; Dutch learning takes off
1777		Martinet's plate of twelve crystals
1785	Takami Senseki born	
1789	Doi Toshitsura born at Kariya, 15 June	
1797	Senseki begins his diary; Hara Yōyūsai becomes the Doi family's lacquerer	
1804–18	Doi starts watching snow "every time it snowed"	
1813	Adopted by the senior Doi house of Koga	
1818–30		Nigiri sushi appears in Edo
1820		Scoresby publishes ninety-six Arctic crystals
1822	Becomes lord of Koga	
1823–29	First posts in the shogun's government	
1824	3,500 eggs sent from Koga to Edo as gifts	Hanaya Yohei opens his sushi shop
1827	Earliest snow-crystal entry in Senseki's diary	
1831	Hotta Masaatsu, Doi's uncle, finishes his bird encyclopedia	
1832	*Sekka Zusetsu* published; the word *sekka* is coined	
1833–37		The Tenpō famine
1834	Takes command of Osaka Castle	
1835	Senseki hands out the book on a tour of the western lands	
1837	Puts down Ōshio Heihachirō's rising; made the shogun's deputy in Kyoto; Kazan paints Senseki	*Hokuetsu Seppu* begins to appear, reprinting the crystals
1838	Kunisada's print with true crystals; the snowflake flute case and tea bowl	
1838–39	Joins the shogun's ruling council	
1839	Snowflake cabinet for the retired shogun; sea bream comes back	Kazan arrested
1840	*Zoku Sekka Zusetsu*, the sequel: 183 crystals in all; snowflake inrō for the Hosokawa loan; Honma records snowflake sweets	
1841	Doi's snowflake swords made	Tenpō Reforms begin
1842	Made councillor for coastal defence	Edo arrests its luxury sushi makers; Britain defeats China
1843	Receives the shogun at Koga; turns against the land decree, helps bring down Mizuno, becomes chief of the council	Kuniyoshi's Earth Spider print
1844	Withdraws after Edo Castle's palace burns; resigns	A Dutch warship urges Japan to open
1846	Senseki dismissed; retires to Koga	
1848	Retires; dies 31 July, aged 60; his heir dies seven weeks later	
1850	Senseki draws the first Japanese map of the Netherlands	
1851	Grandson Doi Toshitomo, the last lord of Koga, born	
1855		James and Cecilia Glaisher draw 151 crystals
1858	Senseki dies in Koga	
1862	*Sekka Zusetsu* recut on new blocks	
1868		The shogunate falls; the Meiji era begins
1885		Wilson Bentley photographs his first snow crystal
1893–1914	Seifū Yohei III makes "sekka style" dishes	
1927	The Doi family graves are moved from Edo to Shōjō-ji	
1929	Kanō Ichirō reintroduces the book	

YEAR	DOI AND HIS WORLD	JAPAN AND BEYOND
1936		Nakaya Ukichirō grows the first artificial snow crystals
1938	Kazan's portrait of Senseki goes to the Tokyo National Museum	
1939	Nakaya tests Doi's drawings: "extremely faithful to nature"	
1963		*13 Assassins*, with Doi as a character
1968	First facsimile, with Kobayashi Teisaku's commentary	
1986	Minakawa Saburō's English translation	
1990	Koga City Museum of History opens	
1997	Suzuki Michio's critique	
2023	Koga City buys Doi's snowflake swords	
2024	Exhibition at Kariya	
2026	Exhibition at Koga	

Who's Who

Doi Toshitsura (1789–1848). Lord of Koga, chief of the shogun's council 1843–44, the Snow Lord.

Doi Toshiatsu (died 1822). Lord of Koga who adopted Toshitsura.

Takami Senseki (1785–1858). Doi's tutor and chief retainer; Dutch-learning scholar, diarist, and producer of the snow book.

Watanabe Kazan (1793–1841). Painter and scholar; Senseki's friend; painted his portrait.

Hara Yōyūsai (1769–1845). Edo's leading lacquer artist; made the snowflake cabinet and inrō.

Gotō Ichijō. Master metalworker; made gold fittings for the snowflake flute case.

Tokugawa Ienari (1773–1841). Shogun for fifty years, then retired shogun; received the snowflake cabinet.

Mizuno Tadakuni (1794–1851). Leading councillor; ran the Tenpō Reforms.

Ōshio Heihachirō (1793–1837). Scholar and former police official; led the 1837 Osaka rising.

Satō Issai (1772–1859). Confucian scholar; wrote a foreword to the sequel.

Honma Yūsei. Scholar; wrote the 1840 line about snowflake sweets.

Komatsu. Doi's aide; wrote that the lord had "no time to eat."

J. F. Martinet (1729–1795). Dutch author of the science book that gave Doi his method.

Suzuki Bokushi (1770–1842). Author of *Hokuetsu Seppu*, which spread the crystals.

Utagawa Kunisada (1786–1865). Print designer; put Doi's crystals on fashionable kimono.

Hanaya Yohei (1799–1858). Edo sushi maker, often credited with inventing nigiri.

Nakaya Ukichirō (1900–1962). Physicist; grew the first artificial snow crystals and tested Doi's drawings.

Doi Toshinori. Doi's father, born a son of the Date house of Sendai; known for court poetry, *kemari*, and tea.

Hotta Masaatsu (1755–1832). Doi's uncle; senior official and compiler of the great bird encyclopedia of the Edo period.

Doi Toshitomo (1851–1929). Doi's grandson through his daughter; the last lord of Koga.

Sanada Yukitsura (1791–1852). Lord of Matsushiro; Doi's colleague as councillor for coastal defence; wrote a poem on one of his tea bowls.

Abe Masahiro (1819–1857). Young councillor who took over the castle rebuilding as Doi withdrew in 1844.

Torii Yōzō (1796–1873). Edo town magistrate and Mizuno's enforcer; said to have changed sides in 1843.

Utagawa Kuniyoshi (1797–1861). Print designer; his Earth Spider print of 1843 was read as a satire of the council.

Ōtsuki Bankei (1801–1878). Scholar of Dutch learning; had *Sekka Zusetsu* recut in 1862.

Johannes Kepler (1571–1630). Astronomer; wrote the first essay on why snow has six sides.

René Descartes (1596–1650). Philosopher; drew six-sided snow crystals in Amsterdam in 1635.

Robert Hooke (1635–1703). English scientist; drew snow through a microscope in *Micrographia*.

Jan Engelman. Dutch physician; pictured 420 crystals from the winter of 1740.

William Scoresby (1789–1857). Whaling captain and scientist; drew ninety-six Arctic crystals.

James Glaisher (1809–1903) and **Cecilia Glaisher** (1828–1892). Meteorologist and artist; drew 151 crystals near London in 1855.

Gustav Hellmann (1854–1939). German meteorologist; wrote the history of snow-crystal study.

Wilson Bentley (1865–1931). Vermont farmer; photographed more than five thousand snow crystals.

Kanō Ichirō. Journalist; reintroduced Doi's book in 1929.

Kobayashi Teisaku. Snow physicist at Hokkaidō; edited the 1968 facsimile.

Minakawa Saburō. Made the English translation of 1986.

Suzuki Michio. Scholar at Tohoku University; argued in 1997 that the book's science had been overrated.

Glossary

Aijitsu-ken (愛日軒) — Doi's studio name, under which the book was issued.

Daimyō — a lord who ruled a domain.

Inrō — a small case of stacked lacquer compartments, worn hanging from the sash.

Jōdai — the keeper of Osaka Castle, who commanded its garrison for the shogun.

Karō — a domain's chief retainer, who ran its business for the lord.

Koku — a measure of rice, roughly what one person ate in a year; used to rate a domain's size.

Maki-e — lacquer decorated with gold or silver powder.

Mon — a small copper coin. A piece of sushi cost about 8 mon.

Netsuke — a carved toggle that held an inrō on the sash.

Nigiri — hand-pressed sushi: a slice of fish on vinegared rice.

Ōi moyō — "the Ōi pattern," Edo's name for the snowflake fashion, after Doi's title.

Oshigashi — a pressed sweet of sugar and rice flour, knocked out of a carved mould.

Raku — hand-shaped, low-fired tea bowls; lords made them as gifts.

Rangaku — "Dutch learning," the study of Western knowledge through Dutch books.

Ri — a measure of distance, about four kilometres.

Rōjū — the shogun's senior council, which ran the government.

Ryō — a gold coin, a large sum.

Sekka (雪華) — "snow flower," Doi's word for a snow crystal.

Sekka Zusetsu (雪華図説) — "Snow Flowers, Illustrated," Doi's 1832 book.

Shirauo — a tiny, nearly transparent fish; tribute for the shogun's table.

Tai — sea bream, the fish of celebration.

Yuki no Tonosama — "the Snow Lord," Doi's nickname.

Yukiwa — "snow ring," the older, scalloped snow motif.

Sources

Doi Toshitsura, *Sekka Zusetsu* (1832) and *Zoku Sekka Zusetsu* (1839/40). First edition scan: National Diet Library, item 2536975; 1862 recut, item 2536974.

Aburakawa Hideaki, *Doi Toshitsura's Sekka Zusetsu: modern translation and commentary* (Snow and Ice Network, 2022). The text of both books, with every preface and afterword.

Nakaya Ukichirō, "A scientific study of *Sekka Zusetsu*" and its follow-up (1939–40). On Aozora Bunko.

Takami Senseki, *Takami Senseki nikki*, ed. Koga City Museum of History, 8 vols. (Yoshikawa Kōbunkan, 2001–04).

Akita Emi, transcription and notes on Senseki's diary, *Hoshi biyori* (2013).

Koga City: official bulletins (2011, 2018, 2021, 2023) and the 2026 exhibition checklist; Koga City Museum of History.

Kariya City History Museum: newsletter and 2024 annual report.

Tokyo National Museum (e-Kokuhō); Printing Museum, Tokyo; Agency for Cultural Affairs (Bunka Isan Online).

Kotobank (Japan's standard dictionaries) and Japanese Wikipedia, for dates and offices.

Food history: Japanese summaries of *Morisada Mankō* and Kitamura Nobuyo; Chūō City on the shirauo tribute box.

Public Domain Review, "The Snow Lord" (2026).

Images: The Metropolitan Museum of Art and the Cleveland Museum of Art (open access), Wikimedia Commons, National Diet Library.

Our full research notes, with a link for every claim, are on the Sekka research page *The Snow Lord: Doi Toshitsura*.

Picture credits

Endpapers, chapter marks, and the 1832 pages that open chapters; the cover follows the book's 1832 title page. *Sekka Zusetsu*, 1832 first edition. National Diet Library, item 2536975 (特1-2982). Public domain.

Crystal plates, 1862 recut, NDL pid 2536974, frame 10. Public domain. Different blocks from the 1832 plates.

Kaisei Nihon yochi rotei zenzu, road map of Japan, Nagakubo Sekisui, 1779; reprinted into the 1840s. Library of Congress 77694708. Public domain.

Portrait of Takami Senseki, Watanabe Kazan, 1837. Colour on silk, 115.1 × 57.2 cm. Tokyo National Museum A-9972. Public domain (Commons).

Takami Senseki Memorial House, Koga, 2008, next to the Koga City Museum of History. Photo Twilight2640 / Wikimedia Commons, CC BY-SA 3.0.

Snow crystals, J. F. Martinet, *Katechismus der Natuur*, Amsterdam, 1777–79, vol. Public domain. The Dutch source of Doi's method and of the twelve non-Doi figures in the 1832 book.

Of several kindes of frozen Figures, Robert Hooke, *Micrographia*, 1665, Schem. CC BY 4.0.

Snow Crystals, Plate X, William Scoresby, *An Account of the Arctic Regions*, 1820, vol. MBLWHOI Library copy via Internet Archive. Public domain.

Snow Crystal, The Met DP351900. Public domain (Met Open Access).

Crystal plates, *Zoku Sekka Zusetsu*, 1840. Shinshu University Library, Digital Archive 0025361163, frame 10. Reproduced by permission of the library, 30 Oct 2026.

Snow crystals, Suzuki Bokushi, *Hokuetsu Seppu*, 1837, drawn from Doi's plates. NDL pid 767984, frame 9 (via Wikimedia Commons). Public domain.

Title page, 1862 recut NDL pid 2536974, frame 3. Public domain.

Portrait of Doi Toshitsura, Shōjō-ji, Koga, lent via the Koga City Museum of History. Public domain (Commons).

Netsuke, Daruma with stylised snowflakes, 19th c. The Met 10.211.1309. Public domain.

Minamoto Raikō and the Earth Spider, Utagawa Kuniyoshi, design of 1843 (this impression mid-1840s). LACMA M.2006.136.292a-c. Public domain.

Yotsu of the Matsukiyo Brothel Performing as a Shirabyōshi. Gochōtei Sadahiro, 1841. The Met 2011.143. Public domain.

Woman with a Folding Fan and Hand Mirror, Utagawa Kunisada, 1838. The Met 2007.49.267. Public domain (Met Open Access).

No. 15, Emperor Kōkō. The Met 2007.49.270, public domain.

Piece from a Kosode with Scattered Snow Roundels (Yukiwa) Filled with Small Flowers. 17th c. The Met 2001.428.4a,b. Public domain.

Waterpot, Awata ware. c. 1850–60s. The Met 91.1.173. Public domain.

Snow-Flake Side Dishes, Seifū Yohei III, 1893–1914. Cleveland Museum of Art 2022.194. CC0.

Snow-Flake Side Dish, Seifū Yohei III, 1893–1914. Cleveland Museum of Art 2022.194.1. CC0.

Box of the Snow-Flake Side Dishes, Seifū Yohei III, 1893–1914. Cleveland Museum of Art 2022.194. CC0.

Box lid of the Snow-Flake Side Dishes Seifū Yohei III, 1893–1914. Cleveland Museum of Art 2022.194. CC0.

Underside of the box lid Seifū Yohei III, 1893–1914. Cleveland Museum of Art 2022.194. CC0.

Snow-Flake Side Dish, Seifū Yohei III, 1893–1914. Cleveland Museum of Art 2022.194.1. CC0.

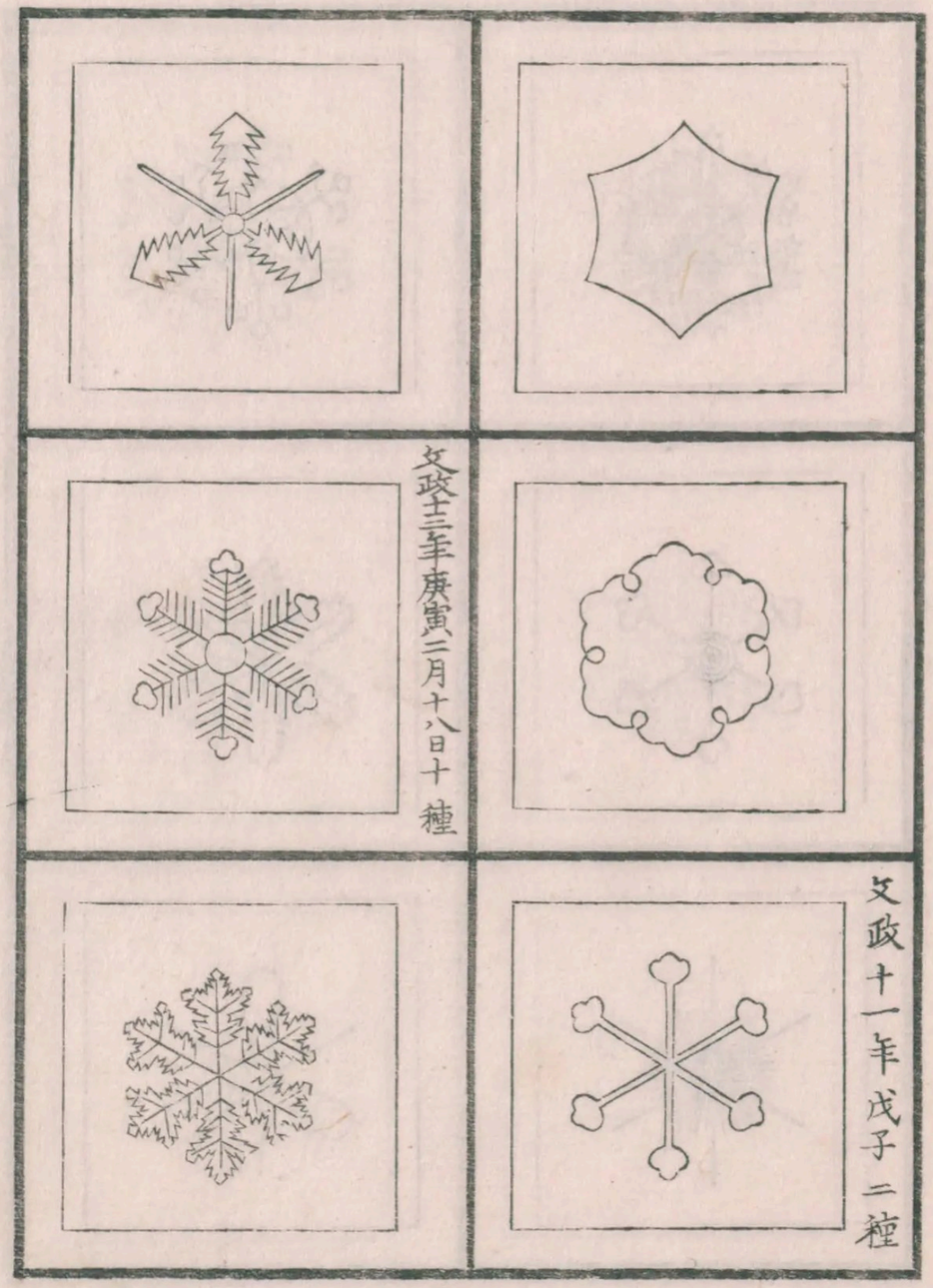
PERMISSIONS

Plates from *Zoku Sekka Zusetsu* (1840) by kind permission of the Shinshu University Library, Digital Archive item 0025361163. Granted 30 October 2026.

Index

13 Assassins 68
Abe Masahiro 51
Aijitsu-ken 33, 64
black satin 11, 27
castella 59–60
coastal defence 49–50
Daimyō 17
Dejima 17, 19
Doi Toshiatsu 16
Doi Toshinori 15
Doi Toshitomo 64
Doi Toshitsura 7, 11, 15, 24, 40, 73
Earth Spider 49–50
Edo 7, 12, 15–17, 21, 24, 30, 34–35, 37, 41–42, 45, 49–51, 53, 59–61, 64, 72, 76
Eisei Bunko 46, 72
flute case 46, 72–73, 76
Gotō Ichijō 46–47
Gustav Hellmann 30
Hanaya Yohei 56, 58–60
Hara Yōyūsai 45–47, 71–72
Hirano-gō 42
Hokuetsu Seppu 35–36
Honma Yūsei 34, 53–54, 60
Hosokawa 46, 72
Hotta Masaatsu 15
Hyakunin Isshu 54
Inrō 45–46, 71–73, 76
J. F. Martinet 23–24, 28, 30–31, 33, 68, 77, 82
James Glaisher 27, 29–30
Jan Engelman 27–28, 30
Jōdai 43
Johannes Kepler 25, 27–28
Kanō Ichirō 7, 20, 23, 25, 30, 67–68, 72, 75
Kariya 7, 15–16, 51, 53, 63, 71–73
Karō 19
Katechismus der Natuur 23–24, 77
Kepler 25, 27–28
Kobayashi Teisaku 67–68
Koga 7, 11–12, 15–17, 19–21, 29–30, 37, 40–42, 46, 49–50, 57, 60, 63–64, 67–68, 71–73, 75
Koga City Museum of History 20, 37, 63, 68, 71, 75
Koku 15–17
Komatsu 24, 34
Kyoto 7, 17, 24, 34, 41–43, 46, 53, 56
lacquer 11–12, 23, 45–47
Les Météores 27
Maki-e 72
Matsu-ga-zushi 59–60
Micrographia 27–28
microscope 21, 23, 27–28, 30, 68, 72–73, 76
Minakawa Saburō 68, 76
Mizuno Tadakuni 49–51, 76
Mon 7, 60
Morisada Mankō 60
Nagasaki 17, 20, 46, 51
Nakaya Ukichirō 7, 20, 23, 25, 30, 34, 67–68, 72, 75
National Diet Library 34, 36–37, 41, 71, 75, 77
Netsuke 45–46, 72
Nigiri 12, 59–61
nigiri 12, 59–61
Nikkō 16, 50
Ōi moyō 53, 55, 57
Oiwake 42
Osaka 7, 12, 17, 19, 23–24, 34, 41–43, 50
Oshigashi 60
Ōshio Heihachirō 20, 41–42, 64, 71, 73
Ōtsuki Bankei 15, 36, 67
Raku 63–64, 71
raku 63–64, 71
Rangaku 19
René Descartes 27–28
Ri 50
Robert Hooke 27–28, 30
Rōjū 17, 49
Ryō 7, 45–46, 59, 64
Sanada Treasure Museum 64, 71
Sanada Yukitsura 50, 64, 71
Satō Issai 23–24, 34, 46, 72, 75–76
sea bream 12, 45–46, 60
Seigan-ji 64
Seikadō Bunko 72
Sekka 7, 11–12, 15, 20, 23, 33–35, 37, 52–57, 63, 67, 71–72, 75, 77
Sekka Zusetsu 11–12, 15, 20, 23, 33–35, 37, 63, 67, 71–72, 75, 77
Shirauo 46, 60
Shōjō-ji 40, 63–64, 72–73
snowflake cabinet 45–46, 49, 60, 72
Suzuki Bokushi 35–36, 67–68, 76
Suzuki Michio 35–36, 67–68, 76
Tai 60
Takami Senseki 7, 17, 19–21, 23, 34–35, 42, 45–46, 60–61, 64, 67–68, 71–73, 75–77
Tenpō famine 41
Tenpō Reforms 49, 51, 60
Tianjing huowen 30
Tokugawa Ienari 45
Tokyo National Museum 19–20, 37, 72, 75
Torii Yōzō 50

Utagawa Kunisada 49–50, 53–55
Utagawa Kuniyoshi 49–50, 54
Watanabe Kazan 19–20, 72–73
Watarase 16, 67
William Scoresby 27, 29–30
Wilson Bentley 27, 30
Yuki no Tonosama 12, 53, 68
Yukiwa 55–56
Zoku Sekka Zusetsu 34–35



文政十一年戊子二種

文政十三年庚寅二月十八日十種

