

# Title: Form Structure of Ikebana

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**Abstract:** This paper discusses about the principle of the form structure.

The method of Ikebana -Japanese flower arrangement- has superior techniques that convert abstract notion such as a view of nature and universe to a definite object.

The prototype of Ikebana was created in the Muromachi era (1336-1573). The traditional style was settled, and many groups that have different notions came out in the middle of the Edo era (1603-1867). Growth of Ikebana was thought that was evolved from the notion to a definite object but in fact, it was evolved from a definite object to the notion.

Every group has different style of Ikebana but those are similar shapes. Three flowers making the main shape are Role-sprays. The longest spray called Ten -heaven-, the shortest Chi - earth-, and the middle Jin -human-. The length of Ten is calculated from the size of the flower vase, and the length of Chi and Jin is calculated from the length of Ten. The proportions of “vase: Ten”, “Jin: Ten” and “Chi: Jin” are closely related to the golden section, 1: 1.6.

The Role-sprays keep the visual balance by the angles, and the size of flowers. To keep the balance, Chi has bigger volume of flowers than Ten and Jin. It can be explain with a physical test. A mobile keeps the balance as a long arm with a light object and a shorter arm with a heavier object. The flower vase is also important to keep the vertical balance.

One of the most important elements of arranging Ikebana is keeping the balance, which is mostly explained by the physical balance.

**Key words:** Design Method, History, Cultural study

## I. Introduction

The art of ikebana (flower arranging), which originated in Japan as far back as 1,000 years ago, has been highly appreciated and valued not only in Japan but also in overseas countries. Josiah Conder first brought ikebana to the attention of the western world over 100 years ago. He is perhaps best known as an architect and for his design of the Rokumeikan Hall. Having found the beauty of ikebana to be quite different from the style of western flower arrangement, Dr. Conder published a paper in Studio magazine, in which he mentioned that ikebana had a form of beauty derived from the principle of the asymmetrical triangle (See Fig. 1).

Having been well known since olden times both in Japan and abroad as mentioned above, the art of ikebana is based on an excellent method that allows such abstract conceptions as views of the nature and universe to be converted into a representational, concrete art form, and its rules of composition gradually evolved over a history

that spans hundreds of years.



Fig. 1 STUDIO magazine

In this study, I will clarify the processes and methods of composition based on the concept of how nature is regarded and its relationship to art, questions that have not received much attention thus far, and make the mechanism of composition clear (See Fig. 2).

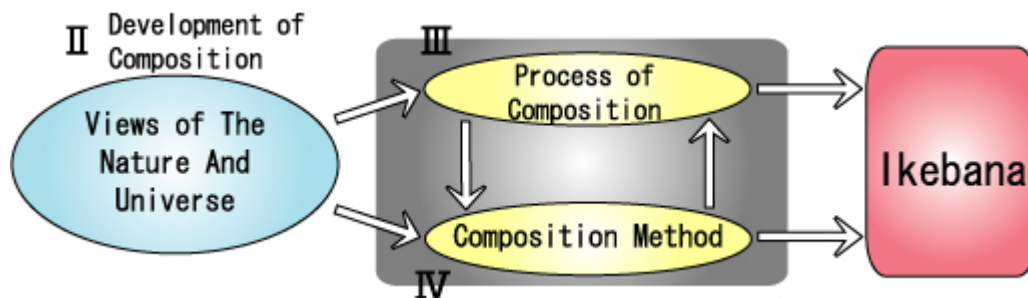


Fig. 2 History of Ikebana

## Development of Composition

### -1 History of Ikebana

In order to understand how Ikebana converts abstract conceptions about nature into art, I will provide a clear description of the history, types, schools and typical styles, and thereby furnish an overview of the development of the art of Ikebana.

Era	AD	Events related to Ikebana
		It was generally believed that gods resided in plants as evidenced by the practice of offering a branch of a particular sort of evergreen to a god and praying that the god would descend and reside in the branch.

	538	With the arrival of Buddhism, it became customary to offer flowers to a statue of the Buddha.	
Heian	810	It is recorded that a priest of Genkoji Temple in Nara established the way in which flowers should be offered.	
	905	The term "to insert flowers (in a vase)" appears in Kokin Wakashu.	
	1001	A description, "to insert cherry blossoms" appears in Makurano-soshi.	
		The custom of appreciating flowers inserted in a vase was generally enjoyed by court nobles and priests. It became customary to place flowers inside buildings rather than in the open-air spaces that formed part of the "Shindendukuri" style of architecture.  "Nageire-bana" (tossed-in flowers): Stems are inserted in a vase in their natural shapes, without fixing the form.	
Kamakura			
	Muromachi	1351	A forerunner of "tatebana" (standing arrangement) appears.  (It is said that "tatebana" consists of two or three different plant varieties and importance was attached to holding the primary stem upright in the center and arranging the subordinate stem(s) around it.)
			"Shoindukuri" architecture develops and the place of "oshi-ita" became fixed.  ("Oshi-ita" is a long wooden board placed in front of a picture of Buddha hung on the wall in lieu of a statue of Buddha, on which a square stand like a salver is placed. The salver is used to offer the Three Essential Instruments, namely, an incense burner, candle stand and vase.)
		1466	Many masters of "tatebana" including Senkei Ikenobo appear.
		1542	Senkei Ikenobo develops the "rikka" style out of "tatebana".
Azuchi-Momoyama		"Tatebana" which had been an ornamental style used in parlors evolved into "rikka" which has a more dynamic appearance, while the grand and luxurious architectural styles of the Azuchi-Momoyama Era came to predominate.  ("Rikka" is a very large composition when compared to "tatebana" and is made up of a greater variety and larger number of plants with subordinate stems arranged three-dimensionally above and below, at right and left, and before and behind the primary stem. At the beginning, it was composed of stems having seven different elements, with the number of stems later increasing.)	
	1573	Tea ceremonies became common, and the types of flowers used in these ceremonies were recorded.	
		Senkei Ikenobo, Jr., a master of the "rikka" style, became popular.	
Edo	16xx	Ikebana, which used to be for the enjoyment of court nobles, samurai and priests, spreads among the common people in Edo.	

	17xx	As a style fitting the small "tokonoma" (alcove) in the "sukiyadukuri" style of architecture, "seika" (living flowers) and "nageirebana" (tossed-in flowers) evolve in Edo. <b>(A method whereby flowers are tossed or thrown into a vase in their original shapes)</b>
	1750	From around this period, the "seika" style reaches its fully realized form. <b>(As ikebana arrangements were placed on the tokonoma for ceremonial purposes, a style composed of three basic stems became established.)</b>
	1770 ~	In addition to the Ikenobo school, many other schools of ikebana came into existence. <b>(e.g., Misho, Enshu, Kodo, Koryu, and Shogetsudo-Koryu)</b>
	1781	<b>"Heika" (vase flowers) which follows the thought of Chinese writers becomes fashionable.</b>
	1801	<b>Shosei Teishosai Yoneichiba, the founder of the orthodox Enshu school of ikebana publishes "Soka Koromo-no-ka", in which he fixed the Three Basic Stems, which represent "sansai (the three basic elements of the universe), namely, "ten" (heaven), "chi" (earth) and "jin" (human).</b>
Meiji	1868	Meiji Restoration Due to the disruption in the social order at this time, traditional culture, including the tea ceremony and ikebana, fell into decay.
	1897	The "moribana" (piled-up flowers) style, which uses western plants as materials, is created by Unshin Ohara, the founder of the Ohara school.
	1908	"Kenzan" (pinholder) is devised by Choka Adachi who was a disciple of the Ikenobo school (later the master of the Adachi-style Soka).

## **-2 Types of Ikebana**

As can be seen from the chronological table, there were many different styles of ikebana, each of which tended to predominate in a particular historical era. The name "ikebana" took root only in the latter half of the Edo Era. The styles which changed from one era to another were not merely transitory fashions but are considered to have evolved through unremitting efforts of practitioners to realize a more well balanced form.

In order to understand the development of ikebana composition, it is essential to summarize its characteristics:

### **"Tatebana" (standing flowers)**

Having commenced in the early Muromachi Era, "tatebana" is a style in which the "shin" (core) (a plant with branches or twigs such as pine) is placed upright in the vase to form the core and the subordinate plants called "shitakusa" (bottom grasses) are placed around the core. Although "yaku-eda" (basic stems) had not been fixed at

this time, the height of "shin" was standardized as 1.5 times that of the vase. Tatebana was arranged in a vase that constituted one of the "Three Essential Instruments" together with an incense burner and candle stand on the "oshi-ita", which is believed to be the original form of the tokonoma, an architectural innovation of the "shoinzukuri" style of architecture. Tatebana was not only an element of religious thought and practice but was also an ornamental arrangement used in parlors. It can be said that its purpose was not entirely ornamental.

### **"Rikka" (standing flowers)**

During the Azuchi-Momoyama Era, characterized by grand and luxurious castles, "rikka", which is a three-dimensional arrangement composed of seven or nine plants, evolved out of tatebana (an arrangement made up of only two or three plants) (See Fig. 3).

### **"Nageirebana" (tossed in flowers)**

This style of Ikebana utilizes mainly bottle-shaped vases, and received its name because the flowers are "tossed" into the vase and the resulting shape is retained without additional modification (See Fig. 4).

Nageirebana made its appearance in the early Edo Era.

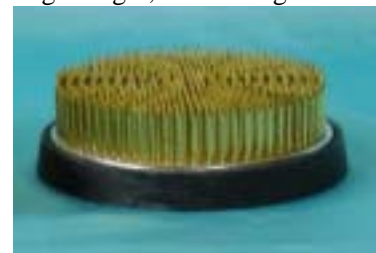
### **"Seika" (living flowers)**

This form gradually evolved out of the nageirebana style, until its form was finally fixed to suit its purpose, which was to adorn ceremonial occasions as a decorative feature. It is composed of three basic stems, which have different names depending on the particular school (See Fig. 5).

### **"Moribana" (piled-up flowers)**

"Moribana" was a style that evolved in order to incorporate flowers of foreign origin, which began to be imported from western countries after the Meiji Restoration (See Fig.6).

The "kenzan" (pinholder) was invented and it allowed flowers to be arranged in a piled-up manner in flat bowl-type vases, something which had been difficult previously (See Fig. 7).



**Fig. 7 Kenzan**



**Fig. 3 Rikka**



**Fig. 4 Nageirebana**



**Fig. 5 Seika**



**Fig. 6 Moribana**

### -3 Basic Styles of Ikebana

With the dawning of Edo Era, ikebana, which used to be reserved for the pleasure of the samurai and priestly classes, gradually came to be adopted by the common people. At the same time, many different schools were established by people who disagreed with the style of the Ikenobo school and its view of nature. Up until this time, the Ikenobo school had been unchallenged. At present, it is said that there are more than 500 different schools, and each school has its own view of nature and fixed style. Each school has its own way of determining the angles and lengths of important (basic) stems, based on which the arrangement is made.

#### (1) "Ten-chi-jin" (heaven, earth and man)

When we see the style of each school in the light of 3D graphics, we notice that the styles of all the schools strongly resemble each other in certain key respects. Although there are certain schools that use more than three basic stems, those extra stems can be thought of as being adjuncts to the three basic stems. Although the names are different depending on the school, they all subscribe to the style of "sansai" (the three basic elements of the universe), which was established during the Edo Era. In this style, the longest stem represents heaven, the shortest represents the earth, and the stem of mid-length represents man. The names of the three basic stems were decided based on each school's view of nature.

The reason why the roles of heaven, earth and man were assigned to these basic stems derives from Buddhism. It originates from a way of expressing the universe using two basic stems like "the sum of things arises between heaven and earth" which is a doctrine from the Buddhist Mandala. The stem representing man placed between those of heaven and earth also derives from the thought of Buddhism, viz., that "man is precious only because he is a part of all creation existing between heaven and earth." Many schools bend the stems and branches with special techniques to deform them to make them more suited to their roles (See Fig. 8).

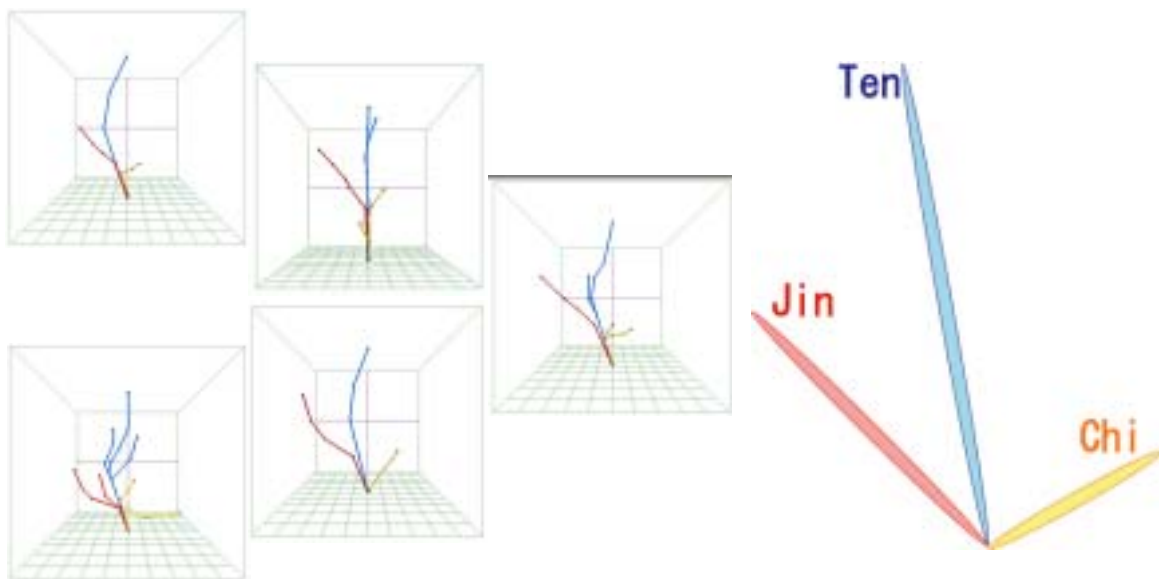


Fig. 8 Basic Styles and "ten-chi-jin"

#### (2) "Shin-gyo-so" (formal, semi-formal and informal)

There are many schools of ikebana that have adopted the "shin-gyo-so" approach. The style is comprised of

"shin", which is the strictest form, "so", a freely running style, and "gyo", which can be placed midway between the other two. The degree of formality depends on the angles in which the basic stems move (See Fig. 9).

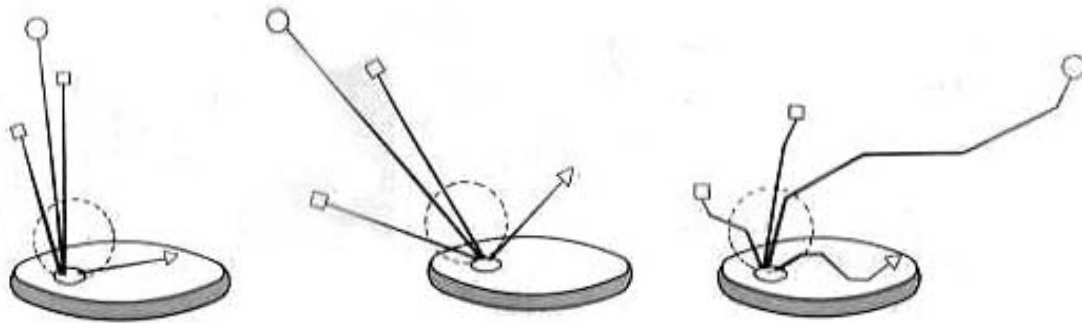


Fig.9 Ikebana “sin-gyo-so”

"Shin-gyo-so" finds its origin in the three different styles of Chinese calligraphy, i.e., "shinsho" or "kaisho" (block style), which was established by Wang Cizhong during the 3rd to 4th century in order to make the characters easier to write. Prior to this, the writing style had changed from "tensho (seal characters)" to "reisho (official style)". "Gyosho" is an intermediate style modified from shinsho, and "sosho" is a highly cursive style written with swift strokes but still based on shinsho (See Fig. 10).

In Japan, the three styles are generally considered to be of same value, however, some people maintain that the "so" is the most mature style as they believe they can reach a higher spiritual state by modifying the characters. However, in China, "shin" is considered to be the most authentic and highly valued style, and "gyo" and "so" are ranked next after "shin".



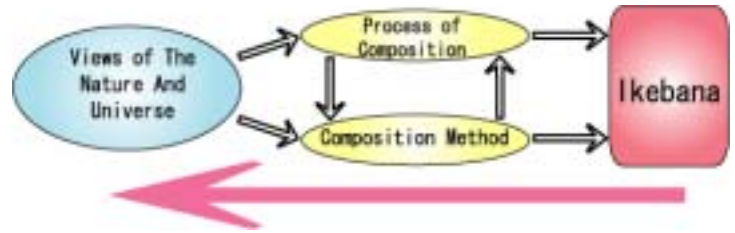
Fig. 10 Chinese calligraphy “shin-gyo-so”

In Ikebana, shin is an arrangement of plants having moderate individuality composed in a rather narrow shape and placed in a formal, ceremonial space or quiet, serene environment such as on the tokonoma in a Japanese-style room. Gyo has a wider profile than shin with a slight degree of movement given to it, and, for instance, is arranged with autumn flowers to convey the sense that the autumn wind is blowing calmly, or reveals a larger part of the water surface to emphasize the water's edge. "So" is arranged by making the expression of gyo more dynamic, and is sometimes arranged in a vase to be hung on a wall. It is intended to express the individuality of the plants by giving variety to the basic stems of "ten-chi-jin" and by making extreme emphases and omissions.

As seen above, shin-gyo-so is used in both Ikebana and landscape gardening. With the degree of asymmetry increasing from shin to gyo, and from gyo to so, shin-gyo-so is considered to express a more natural and mature aesthetic.

**-4 Summary**

Ikebana originated as a way of appreciating cut flowers put in a vase and placed indoors. Gradually, fixed styles developed, the art form diverged into many schools, and became connected with different views of nature and religion depending on the particular school. In other words, in the development of ikebana, the art form was not determined by a particular conception of nature, but on the contrary, the processes and methods of composition gradually became fixed in the course of creating arrangements and the art became associated with distinct conceptions of nature and religion over time (See Fig. 11).



**Fig. 11 Development of The Art of Ikebana**

**Process of Ikebana Composition**

**-1 Foreword**

In contemporary art design, the designer begins the work with a particular "aim" such as the purpose to which the design will be put by the target user and the "architecture" of what is designed in mind. Thus, the "aim" and "architecture" are vitally important when working out a design.

Focusing attention on the conceptual process, which may be informed by such factors as views of nature and religion, and how these concepts come to be incorporated into a work, I will examine whether the concepts of "aim" and "architecture" exist in the ikebana process and make clear how they are determined.

**-2 Process of Ikebana Composition**

Before beginning an ikebana arrangement, we must first decide where it will be placed. In former days, ikebana arrangements were invariably placed in the tokonoma, but today, many different locations are used and are acceptable. Sometimes, the vase is selected prior to deciding the location and size of the space where the arrangement will be placed. This is the practice followed in rikka. This style of arrangement was made for the emperor or shogun, and required sublimity, but in most cases, the place is the first thing to be decided. Then, the approximate "size" which the Ikebana occupies in that space is considered. We must make a large arrangement for a large space, and comparatively small one for a narrow space.

The most important factor is the "use" to which the ikebana arrangement will be put, i.e., for whom and for what reason it is arranged. These three factors virtually determine what kind of vase will be used. As will be described in the next section, the lengths of the stems for ikebana are decided by the size of the vase used.



**Fig. 12 Process of Ikebana Composition"**



Accordingly, when a large arrangement is desired, it is necessary to select a large vase, and when a small arrangement is desired, a small vase. Also, for a space with ample ceiling height, it is necessary to select a bottle-type vase for nageirebana, and for a space with ample width, a flat bowl-type vase for moribana is more appropriate.

In other words, in Ikebana, the "aim" is the place and the person for whom it is arranged, and the "architecture" is the vase to be used (See Fig. 12).

### -3 Comparison with The Composition Process in Art Design

Although the term "design" covers various things ranging from home electric appliances, articles of daily use, clothes, machines, computers, buildings, and extending even to ambiance, the factors that should be considered in the design process do not actually vary a great deal.

We first decide who the "target user" is. This means knowing the age group and sex of the user or users, for example. Then we need to decide the directionality of the product by the "product segment" from the manufacturer's lineup of products and from competing products made by other manufacturers. Also, as in the case of automobile, the "basic platform" such as engine type is decided.

When these three factors are decided, the "package" is decided almost automatically. The package plays such an important role in design that it is said that when the package, which is the eyepoint, tread wheelbase in the case of automobile, is decided, most of the design is already determined (See Fig. 13).

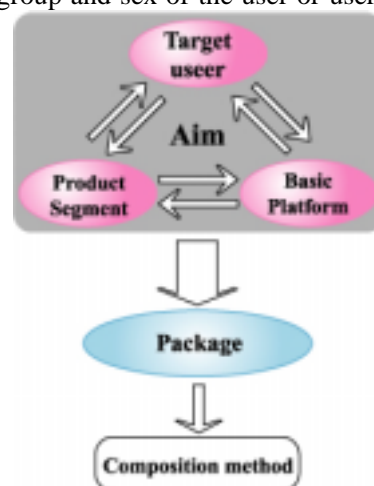


Fig. 13 Process of Design Composition”

### -4 Summary

It has been shown that, in the Ikebana composition process, when the "aim" regarding the person for whom it is to be arranged, place, and the size suiting the width of the place are all established, the "architecture" (which is the vase to suit these factors) is determined automatically.

Likewise, in the composition process for design art, when the user and the directionality of the product, and the basic architecture suiting them have been decided, the "architecture", which is the package, is defined automatically.

Thus, it has been shown that in the composition process for Ikebana, despite being a classical Japanese art form, almost the entire framework is determined by the "aim" and "architecture" as in the case of the process of design art, and the arranging of the flowers begins from that point. Also, it can be said that the package in design art that corresponds to the "architecture", which is the vase in Ikebana, is one of the most important factors in the composition process.

## Composition method

### -1 Foreword

It can be said that even such a classical art form as ikebana is based on the same process as that employed in contemporary design art. Since the process described is not fully able to express views of nature and universe, which are vital elements in ikebana arrangements, I will discuss the methods used in ikebana to achieve these effects. In particular, I focus attention on the fact that the lengths and angles of the plants to be arranged are definitely specified in the literature of each school. In the investigation of lengths and angles of plants, I selected the 10 schools which are generally accepted as being the most prestigious from among the hundreds of schools that are currently operating. We established that the major elements of ikebana composition could be obtained by examining the average data on plant lengths and angles.

### -2 Role of The Kaki

Kakies (flower vases) were not intentionally produced to accommodate flowers until the beginning of the Edo Era. All the items referred to kakies till then were ornamental pots with a certain ornamentation and special function, such as ceremonial or sake ware. When kaki manufacture began, they were selected depending on the season or style (See Fig. 14).

When "tatebana", the most classical style of ikebana is arranged, a vase which conveys a sense of long history behind it, such as a vase of ancient copper with handles on both sides, is selected. When the dignified beauty is to be expressed as in "seika", a kaki made of copper or brass, or if a simple image is to be expressed, a bamboo kaki is selected. In both "tatebana" and "seika", a rather a tall kaki is often used. For "moribana" in which flowers are arranged as if they were piled up using a "kenzan" to hold the stems, a flat bowl-style, shallow kaki is selected. This kaki suits wide flower arrangements. While "tatebana" and "seika" are arranged to attain a certain height, and "moribana", a certain width, "nageirebana" is arranged to have both height and width without using a "kenzan", but is contrived so that the stems can rest firmly in bottle- or pot-type kaki without extra support.



Fig. 14 Kakies

Thus, the kaki to be used is decided by the purpose and size of the arrangement to be made, and it can be said that when the kaki is decided, the form of the work to be completed is virtually determined.

One theory holds that the origin of ikebana was as "an ornament to show the kaki ". From this it is clear that the kaki is an important element of ikebana.

### -3 Lengths of Basic Stems

When a kaki has been selected, the size of the work as a whole is also decided. It is not only because the number of stems that can be inserted is physically limited and stability must be maintained to prevent the

arrangement from falling over, but also because each school of ikebana has its own rules to determine the lengths of the stems, especially the stem representing "ten (heaven)", in accordance with the size of the kaki used. I have investigated how the lengths of the basic stems are decided with the ten most prominent schools.

### Kaki : "ten"

As mentioned in -4, the basic stem of "ten" is the longest of the three basic stems and extends toward heaven. According to Sogetsu school, for instance, the length of the "ten" stem is set at 1.5 to 2 times the diameter plus the depth of the kaki. In the Ikenobo school, which has the longest history of all the schools, it is fixed at 1.5 to 3 times the height of the kaki in the case of "seika", and 1.5 times the diameter of the kaki in the case of "moribana". In the Misho school, it is fixed to be 1.5 to 2 times the diameter of the kaki in the case of "moribana", and 1.5 to 2 times the height of the kaki plus the diameter of the opening of the vase. In the Ryusho school, it is fixed at approximately 2 times the diameter plus the depth of the kaki.

Even though it is possible to arrange longer stems upright by using, for instance, a "kenzan", every school fixes the height of the "ten" stem at "1.5 times the height of the kaki plus a little" and in the case of a flat bowl-type kaki, at "1.5 times the diameter of the kaki plus a little". As for this "plus a little" portion, it is explained that the height of the stem becomes slightly more than 1.5 times by adding the diameter of the kaki in the case of a bottle- or pot-type kaki, and by adding the depth of the kaki in the case of a flat bowl-type vase.

It can be said that the relation between the size of the kaki and the length of "ten" is expressed as kaki : "ten" = 1 : 1.5 + . . . . Conversely, this can be expressed as "ten" : vase = 0.66 + . . . : 1 (See Fig. 15).

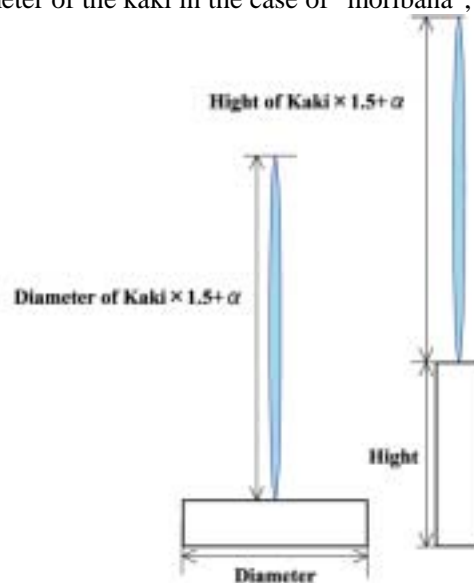


Fig. 15 "ten": vase

### "ten" : "jin" and "ten" : "chi"

The "jin" and "chi" stems are basic stems of middle length and shortest length respectively. Although the length of the "ten" stem is calculated from the size of the kaki, the length of the "jin" stem is calculated from the length of the "ten" stem in accordance with the theory of each school, and not from the size of the kaki. Each school describes the length of the "jin" stem based on the assumption that the length of the "ten" stem is set as 1.

When the lengths of the "ten" and "jin" stems are expressed in the form of a table, they are found to be proximate. As an average figure, their relation is expressed as "ten" : "jin" = 1 : 0.67 (See Fig. 16).

As for the length of the "chi" stem, some schools use the length of the "ten" stem, and others use the length of the "jin" stem to calculate its length. To avoid the complexity of using different bases, if it is calculated based on the

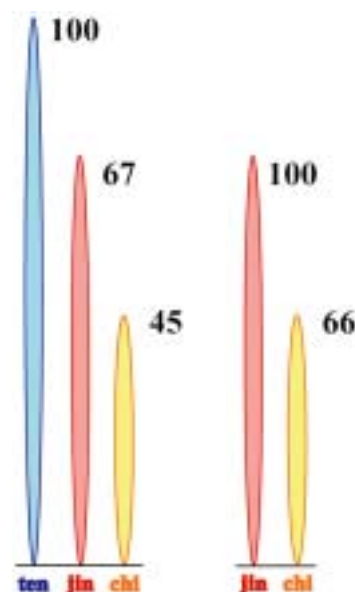


Fig. 16 "ten": "jin": "chi"

length of the "ten" stem, it can be also said that the figures are proximate. As an average, I obtained the figure of "ten" : "chi" = 1 : 0.45.

### "jin" : "chi"

The length of the "chi" stem is also similar as described above, and on average, it is expressed as "jin" : "chi" = 1 : 0.66.

### Golden Section

Viewing the ratios discussed thus far, it is noticed that the ratios of kaki : "ten", "jin" : "ten" and "chi" : "jin" resemble each other. It has been found that this ratio resembles the "golden section" ( $1:1.618 = 0.618:1$ ), which defines the formal beauty of the architecture of ancient Greece and Egypt and also that of the contemporary art design.

### -4 Angles And Volumes of Basic Stems

We can now understand the ratios of the lengths, but in ikebana, all the stems are not arranged at the same angle. When we examine the historical documents of each school, we notice that they describe not only the lengths but also the angles and spreads.

When we evaluate an ikebana work, we often refer to its balance, but the theories do not describe clearly how this good balance is to be achieved.

When we express the lengths and angles (directions) on the same dimension, it is possible to use the mathematical principle of vectors. However, the fact that flowers are not wire rods represents a problem. Plants with branches and twigs are often used as the basic stem, but they are not shaped like a piece of straight wire. Branches are often accompanied by flowers and leaves, so their volume must also be taken into consideration. Accordingly, if the method employed is intended to achieve a visual balance in an ikebana arrangement, the three conditions, namely, the lengths, angles and volumes must be simultaneously satisfied.

It can be said that each and every component that constitutes "shin", "gyo" and "so" (section ) is well balanced. However, since their angles are different from each other, they must be supplemented by other elements. As our studies indicate that the lengths remain constant , it is sometimes necessary to restore the balance destroyed by the angles by employing a third element, "volume".

In this section, I investigate the balance that is attained by the three elements, the length, angle, and volume by using a mobile. Since the mobile is a work which is balanced by all three elements,

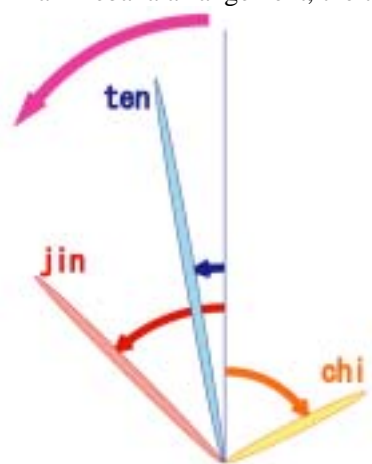


Fig. 17 Visual Balance

namely, the frame bars, the angles of the frame bars and the materials hung from the frame bars, I thought that it could act as a model and as a basis for discussing the three conditions needed to balance an ikebana flower arrangement.

In viewing a general, basic style of ikebana, it is necessary to supplement the volume on the side of the "chi" stem, because the volume on the left-hand side where the longer "ten" and "jin" stems are situated results in a visually slanted appearance (See Fig. 17). When we see this as a mobile upside down, it is impossible to maintain these angles because the "ten" and "chi" stems are longer than the other stem.

Two methods can be adopted to maintain the balance of this mobile with the angles as shown in the figure. One is to decrease the lengths of the "ten" and "jin" stems, and the other is to increase the weight of the "chi" stem. However, since the lengths and angles are prescribed, we must vary the weight of the "chi" stem (See Fig. 18).

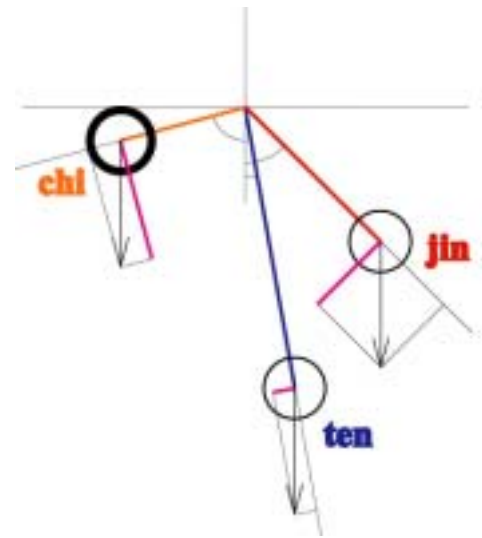


Fig. 18 Physical Balance

The rotation of the mobile can be obtained by the following formula:

$$"chi" \times \sin "chi" \times 0.45 = "ten" \times \sin "chi" \times 1 + "jin" \times \sin "jin" \times 0.67$$

From this formula, it can be seen that if the weight of "chi" is made larger than that of "ten" and "jin", the balance can be maintained.

When we look at ikebana arrangements, it is obvious that many of the works are made so that the "chi" stems convey a visual sense of considerable volume (See Fig. 19). The visual sense of volume varies depending on the dimensions of the arrangement and brightness.

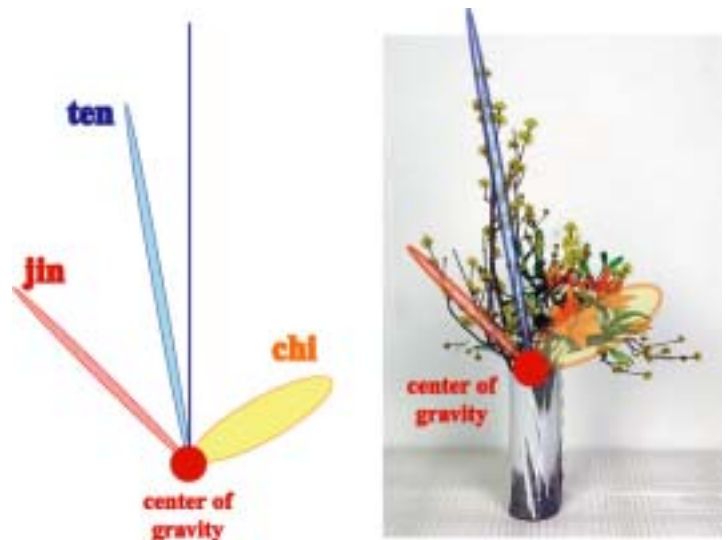


Fig. 19 Considerable Volume

### -5 Basic Stems And Kaki

Many Ikebana works maintain their balance by the above-mentioned method. However, the balance is also maintained by supplementing the insufficient sense of volume of the plant by the kaki.

The center of the basic stems is shifted to the left-hand side. But by placing the feet of the stems, or the center

of gravity, at the left-hand side in the kaki, it becomes possible to express a sense of gravity on the right-hand side and maintain the balance of the work as a whole (See Fig. 20). This method is used by many schools (See Fig. 21).

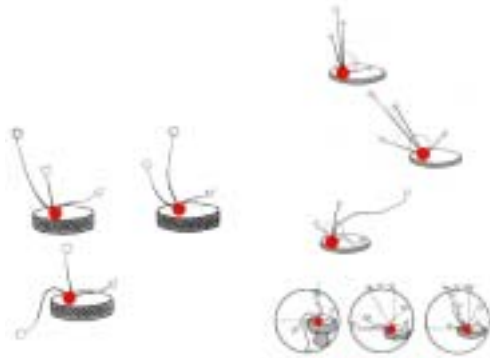


Fig. 21 Basic Styles with Vase



Fig. 20 Volume of The Plant And Vase

## -6 Summary

All ikebana schools uphold the rule that arrangements must be constructed around the three basic stems, which are collectively called "ten-chi-jin". Since the lengths of the basic stems are prescribed based on the height and diameter of the opening of the kaki, it can be said that the kaki is also one of the important elements of ikebana. Not only the lengths of the basic stems, but also the angle and sense of volume of the flowers are contrived in such a way that a good visual balance is realized.

In the art of ikebana, to balance means to symmetrize the "quantum" which is the integration of what are by nature different dimensions, such as the lengths, angles and the sense of volume of flowers.

It has been found that such contrivances can be explained as not only forms of good visual balance, but also good physical balance.

## Conclusions

Ikebana composition is performed in order to create visual balance, and this balance can be explained in terms of the physical balance. Further, the horizontal balance is realized by the basic stems against the center of gravity, which is at the bottom of the basic stems, and the vertical balance is realized by the basic stems and kaki. In other words, in an ikebana work, flowers are important at the appreciation stage when it is viewed, but the kaki plays an extremely important role at the arrangement stage. Also, it can be said that the kaki is the platform, or in other words, the frame, and determines the composition of the work.

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