Floral morphology of *Adoxa moschatellina*

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The flower of the genus *Adoxa* has been studied in details from the morphological point of view and are generally considered as to be distinct. A terminal flower is regarded as 4-merous, bearing two calyx-lobes, four corolla-lobes, four pairs of two monotaceous stamens, and four carpels, and lateral flower as 5-merous, bearing three calyx-lobes, five corolla-lobes, five pairs of two stamens, and five carpels. Based on the difference in the numerical ratio of calyx- and corolla-lobes especially in lateral flower, various morphological interpretations were made for the “calyx and corolla”. Wydler (1850) and Martinovský (1931) interpreted them as calyx and corolla, Eichler (1875) as involucre and corolla, and Drude (1884) as involucre and calyx. According to the various interpretations of “calyx and corolla”, the taxonomic position of *Adoxa* was variously referred.

In this paper it is intended to elucidate the morphology of the flower of *Adoxa*, and the floral anatomical investigation is made in some details for *Adoxa moschatellina*. The morphological interpretation of “calyx and corolla” is revised from the viewpoint of floral anatomy.

For this study I have examined the specimens preserved in the Herbarium of Kyoto University. I could have made a successful field trip with Prof. T. Shimizu in Nagano Prefecture; Miss M. Ito drew all the figures in this paper; and the colleagues in the laboratory of plant taxonomy, Kyoto University, provided me valuable advices. I wish to express my deep gratitude to all of them.

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**Materials and Methods**

The materials were collected at Uchiyama-kyo, Nagano Prefecture and on Mt. Ryozen, Shiga Prefecture. For the floral anatomical investigation, the materials were fixed and stored in 75% ethyl alcohol in the field. To observe the vascularization of calyx, corolla, and stamens, more than fifteen flowers were bleached, and then were made clear by lactic acid. For the detailed investigation of floral anatomy, the flowers were

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Fig. 1. Floral anatomy of terminal flowers (1-8) and lateral ones (9-10) of Adoxa moschatellina.

1. Cross section of peduncle, whose four bundles are separating the bundles supplying a pair of lateral flowers (×50).

2. Cross section at lowermost level of receptacle, showing four bundles running up from peduncle (×50).

3. At level slightly upper than that, where there are four bundles as a result of division
dehydrated, and embedded through the n-butyl-alcohol-paraffine-wax series. I observed more than ten specimens of cross sections and five of longitudinal sections. The thickness of sections was 20–25 μ. All the materials were stained by safranin.

Observation

Four bundles run through peduncle like in caulis. Two of them give off the bundles entering a pedicel of a lateral flower as seen in fig. 1–1. Four bundles run up to the base of receptacle of a terminal flower (fig. 1–2), and then each of two of them gives off a branch. The two branches from different bundles unite at slightly upper level than the branching and then the bundles in receptacle become five in number (fig. 1–3.) All of these five bundles run to the periphery of receptacle branching thin bundles running to the center. One to three of the peripheral bundles divide into two (fig. 2–6-7). The bundles approaching the center of receptacle fuse to form a central bundle at the middle level of ovary (fig. 1–4–5). Just at the lower level of the attachment of ovules, the central bundle divides into eight. Four of them in alternate position are the ventral bundles of carpels and proceed to the periphery of ovary along the septa, and the others supply the pendulous ovules (fig. 1–6 & 3).

Fig. 2–6–7 show the vascularization of a terminal flower. In case the peripheral bundles are eight in number, two opposite ones supply both the calyx-lobe and stamen, alternate four corolla-lobes, and the remaining two stamens. All the peripheral bundles give off centripetally the carpellary supplies at the level just below the attachment of calyx. The alternate four bundles entering into stamens branch lateral trace which fuses to the ventral bundle proceeding to the periphery of ovary from the center (fig. 3). The other bundles give off dorsal bundles situating at the dorsal portion of loculus (fig. 2–6–7). Among the carpellary supplies the ventral bundles are terminated at the top of ovary, and the dorsal ones run up to the elongate style (fig. 1–8). Each of the four ventral bundles often divides into two, corresponding to the margin of neighbouring carpels.

As observed by Wydler, Sprague, and others, the lateral flowers are variable in the number of floral parts. The variation of lateral flower and its vascularization are shown in fig. 2–1–5. These figures show that the peculiar variation is usually observed at the posterior side of flower, where are various intermediates from a simple corolla-lobe to

and fusion of four bundles (×50). 4. At level further up, where bundles are dividing into and proceeding to periphery of ovary and some strands remain in center (×50). 5. At middle level of ovary, showing four loculi, a central bundle, lateral ventral ones, dorsal ones, calyx-stamen ones, and corolla ones (×40). 6. At level of attachment of perianthes, where a central bundle is dividing into four ventral bundles removing to periphery and four ovular ones, and four dorsal bundles are found at dorsal portion of loculi (×50). 7. Cross section at upper extreme of ovary, showing transmitting tissue forming “X” and four ventral and four dorsal bundles (×50). 8. At base of style, showing four dorsal bundles (×50). 9. At middle level of ovary with five loculi (×50). 10. Longitudinal section of ovary, showing pendulous ovules and transmitting tissues not entering into free styles (×50).
two corolla-lobes with a pair of stamens: a bifid corolla-lobe with a gland, a bifid corolla-lobe with two glands, and two lobes and a pair of monotaceous stamens at the portion between lobes.

The most frequently observed form is as shown in fig. 2–1 that five vascular supplies to calyx, corolla, and stamens become distinct at the base of ovary, and run up in the periphery at the portion opposite to the stamens. Two of the five bundles run up alternately to calyx-lobes and each of them divides into two which supply two monotaceous stamens. Each of the others branches centrifugally a bundle supplying a calyx-lobe at the level slightly below the attachment of calyx. At the upper level than that, the bundle separates radially one or two corolla bundles, each of which runs periclinally and enters the center of corolla-lobe. After the separation of corolla bundle, the bundle forks and the two enter a pair of monotaceous stamens.

The calyx bundle is, however, observed to be variable. The calyx bundle is always found in the flowers collected from Uchiyama-kyo, and never branches in the calyx-lobe. In a few of the materials from Mt. Ryozen, on the other hand, the calyx is not supplied by any bundle.

The vascular supplies to the corolla-lobe at the posterior side are much variable even in the typical lateral flower having three calyx-lobes, five corolla-lobes, and five pairs of monotaceous stamens. In the case most abundant in our species, a corolla bundle is branched from the bundle entering into calyx and stamen at the slightly lower level than the attachment of corolla (fig. 2–1). In the second commonest case, a posterior corolla-lobe is supplied by a bundle which becomes distinct at the base of ovary and runs up along the periphery oppositely to this lobe (fig. 2–2). In a few cases, a posterior corolla-lobe is supplied by two bundles separated from two bundles opposite to calyx-lobe and stamen. These two unite at the base of corolla (fig. 2–3), or remain distinct (fig. 2–4). The apex of corolla-lobe is generally not bifid in the former two cases, but in the latter. In another case a bifid corolla-lobe is supplied by a bundle separated from the bundle opposite to calyx and stamen and by a bundle running up in the periphery from the base of ovary. Where a posterior corolla-lobe is deeply lobed like the obliquely anterior corolla-lobes, each of corolla-lobes is supplied by a bundle as shown in fig. 2–5. I have observed only one flower with two corolla-lobes at posterior side, i.e. typically 3-merous flower (fig. 2–5). In this case a pair of stamens are supplied by a bundle becoming distinct at the base of ovary like as other two pairs of stamens situating at the portion between the two corolla-lobes, and each of corolla-lobes by a bundle separated from those opposite to neighbouring calyx and stamen (fig. 2–5).

Morphology of the flower of Adoxa.—Based on the different numbers of calyx-lobes and corolla-lobes, various morphological interpretations of "calyx and corolla" have been given to the flower of Adoxa. Wydler regarded them as true calyx and corolla:
Fig. 2. Variation of the vascularization to calyx- and corolla-lobes and stamens in lateral flowers (1~5) and terminal ones (6~7) of Adoxa moschatellina. These figures are illustrated from the side of receptacle, and stamen is omitted. Arrows show an evolutionary trend from typically 3-merous flower to the flower having numerical ratio 3 : 5 in lateral flower.

1. Most abundant case of vascularization, whose posterior corolla-lobe is supplied by a bundle given off from a neighbouring peripheral bundle. 2. Next abundant: a posterior lobe is directly supplied by a bundle becoming distinct at base of ovary. 3. A posterior corolla lobe is supplied by two bundles, each of which fuses together at base and is separated from distinct neighbouring peripheral bundle. 4. A bifid posterior lobe supplied by two bundles which do not fuse. 5. Typically 3-merous flower in which two corolla-lobes and a pair of stamens are found at posterior side. 6 and 7. 2-merous flower.
Fig. 3. Longitudinal section of lateral flower (corresponding to fig. 2–1) of *Adoxa moschatellina*, showing a pendulous ovule, gland at base of corolla, dorsal bundle entering into free style, ventral bundle not running up to style, and calyx-stamen (or -corolla) bundle separating a lateral ventral bundle.

A lateral flower has five calyx-lobes like the corolla-lobes in ancestral form whose flower consists of five calyx- and five corolla-lobes arranged alternately as usual in the case of 5-merous flowers. The calyx-lobes are reduced to three in number by the elimination of two obliquely anterior calyx-lobes (see his Taf. III, fig. 2). Concerning the terminal flower, two opposite calyx-lobes among four had been eliminated.

To interpret the variations of the floral parts at posterior side of lateral flower from the viewpoint of Wydler's hypothesis that two obliquely anterior calyx-lobes had been eliminated from typically 5-merous flower, two possibilities can be taken into consideration as follows. A posterior corolla-lobe divides longitudinally into two and a pair of posterior stamens occur newly as in Martinovský's conclusion, or 5-merous flower changes into 6-merous at first and then the floral parts show the tendency to fuse and reduce only at the posterior side. However, the former possibility is hardly supported as mentioned below. From the viewpoint of the latter, we are obliged to make one more hypothesis that a calyx-lobe at posterior side and two at obliquely anterior sides also have been eliminated. According to my anatomical investigation, the corolla bundle is always separated from the bundle running up in the portion opposite to calyx or stamen, except in some cases in the posterior corolla-lobe (fig. 2–1–5). If the Wydler's speculation that two obliquely anterior calyx-lobes had been eliminated were actual, there would be observed the case that the bundle directly entering into the stamen at
obliquely anterior sides should branch the corolla bundle as in other calyx-corolla bundles. I could find, however, no trace in such a way.

EICHLER interpreted “calyx and corolla” as involucre and corolla. According to him, three outer lobes of lateral flower consist of a bract and a pair of bracteoles, and two lobes of terminal one of a pair of bracts, as commonly observed in the Caprifoliaceae. All the five calyx-lobes had been extinct, because outer lobes were three in number and obliquely posterior two of them were opposite to two of the inner lobes (see his fig. 146). Such a condition of flower is not known in the flower of the Caprifoliaceae to which EICHLER places Adoxa. The inner lobes were regarded as corolla-lobes, because those were alternate to the pairs of stamens. As pointed out by DRUDE and SPRAGUE, this involucre-corolla hypothesis was based on the misobservation that two outer lobes were opposite to inner ones.

DRUDE concluded that outer lobes were regarded as involucre and inner lobes as calyx. SPRAGUE supported involucre-calyx hypothesis standing on such basis as: the absence of bract and subtending bract at the base of flower, the lack of the correlation in the increase or decrease of the outer perianth with that of the outer whorls of the flower, the occurrence of a terminal flower without an outer perianth, the occurrence of one or two bracteoles or secondary flower on the pedicel of a lateral flower, and others.

It is known in various groups that bract and bracteole are absent at the base of flower. The lack of correlation in the number of outer perianth with the other whorles of flower is known in cases as the Portulacaceae, Anotis whitiana, Abelia, and others. According to my conclusion as mentioned below, however, this correlation is recognized evidently. SPRAGUE referred to EICHLER’s conclusion that the absence of outer perianth in a terminal flower was attributed to each of two bracts producing a flower forming the third pair in its axil. However, it is hardly referable that the bract strongly fusing to ovary produces a branch bearing a flower subtended by a bract and two bracteoles. The last evidence quoted by SPRAGUE obliges him to propose a peculiar concept of “empty bract” which has the potentiality to produce lateral flowers and the branch of inflorescence.

From the observation of a subtending (radial) leaf and two opposite cauline leaves, EICHLER, SPRAGUE, and others concluded that the three lobes of an involucre of lateral flower were composed of a subtending bract and a pair of bracts and that the two lobes of a terminal flower were corresponding to a pair of bracts like as the cauline leaves. However, the pedicel of lateral flower has no subtending bract at the base. In the case that peduncle bears a secondary long or short branch terminated by a flower at the lower level than the normal portion of lateral flower, the branch is not subtended by any bract. From these observations, it is particular that a pedicel does not bear any subtending bract at the base but at the top like a lobe of involucre of lateral flower.

The involucre hypothesis can not be supported by the following facts. According
to my study on the inflorescence of Linnaeae (FUKUOKA, 1969), the number of bract
and/or bracteoles is usually two or four when the caulis has two opposite leaves and
a flower terminates a pedicel. A bundle supplying an outer lobe of flower in Adoxa
fuses to the bundle entering into an inner lobe and a pair of stamens at the base of recepta-
cle in most cases studied (fig. 2–1~5). In Linnaea borealis, Kolkwitzia amabilis, and some of
Lonicera whose bract and bracteoles fuse highly to the ovary, however, bract and bracteole
bundles are distinct from calyx, corolla, and stamen bundles even at the base of ovary
(FUKUOKA, 1972).

From the observation on the variation of flowers, MARTINOVSKÝ proposed a new
calyx-corolla hypothesis. According to his hypothesis, the flower of Adoxa is originally
2-merous, i.e. two calyx-lobes, two corolla-lobes, four pairs of stamens, and two carpels,
and each of the floral parts shows a tendency to divide longitudinally as in monotaceous
stamens. In terminal flower, each of the two corolla-lobes splits into two, resulting four
in all. The lateral flower was interpreted as to be derived from such terminal flower
by the process as follows: a calyx-lobe divides longitudinally to form three in number;
a corolla-lobe splits into two, thus becoming five in all; and then the longitudinal division
of a stamen occurs, resulting in five pairs. In typically 6-merous flower of terminal
flower, such division occurs even in a posterior corolla-lobe and a stamen.

It is difficult to explain by the MARTINOVSKÝ’s hypothesis the occurrence of two
monotaceous stamens between two corolla-lobes at posterior side. If a calyx-lobe divided
longitudinally, the two lobes should be adjacent to each other as well as to corolla-
lobes. There are a few cases that a posterior corolla-lobe is supplied by two distinct
bundles. It is hardly supported by these cases the speculation that two posterior corolla-
lobes result from the longitudinal division of a lobe as in 2-merous hypothesis. However,
two posterior corolla-lobes show a tendency to fuse together and the MARTINOVSKÝ’s
hypothesis is hardly supported here.

Judging from the fact that corolla bundles at posterior side of lateral flower show a
tendency to fuse together, the variation of floral parts at posterior side seems to show a
change in the following way: 1) most primitive stage has two corolla-lobes and a
pair of stamens at posterior side (fig. 2–5); 2) posterior stamens have been eliminated;
3) two posterior corolla-lobes are supplied by two distinct bundles, each of which does
not fuse together but extends the apex of lobe, and two corolla glands are distinct (fig.
2–4); 4) these bundles fuse together at the base of corolla whose apex is shallowly
lobed and corolla glands combine to each other as the result of the approach of two
corolla bundles at the base (fig. 2–3); 5) a corolla-lobe is supplied only by one bundle
(fig. 2–1~2).

Therefore, the ancestral form of the lateral flower of Adoxa seems to have been
3-merous, i.e. three calyx-lobes, six corolla-lobes, each of them with a gland at the base,
and six pairs of stamens (fig. 2–5). As mentioned by EICHLER, SPRAGUE, and others,
such 3-merous flower is observed rarely. The 3-merous flower is also found in gamo-
petalous members, Sambucus australasica, Asperula tinctoria, and others. If we recognize
such an evolutionary trend at the posterior side of lateral flower, the change from typically
3-merous flower to the flower having numerical ratio 3 : 5 is easily speculated along the
following process: a pair of posterior stamens have been reduced at first and two posterior
corolla-lobes and corolla glands gradually fuse to each other as in fig. 2–5~1. Such a
change of lateral flower seems to have occurred in correlation with the dorsiventrality.

The lateral flower of Adoxa might better be recognized here as 3-merous in opposition
to a current opinion as 5-merous, and terminal flower not as 4-merous but 2-merous.
The number of floral parts is sometimes variable even in a single inflorescence as observed
in Sambucus, Lonicera angustifolia, L. cerasina, and others. In Adoxa two types of lateral
flower, 3- and 2-merous, are sometimes observed in glomerule flowers. Even in the
terminal flower, Wydler, Clarke (1880), and others reported 3-merous flower.

As mentioned above, all the variations observed in the lateral flower of Adoxa may
be interpreted morphologically rather simply by this hypothesis. The hypothesis proposed
here explains very well the fact that the floral parts are variable only at the posterior
side of lateral flower. The difference between the terminal and lateral flowers is shown
by that in the number of floral parts (2-merous ↔ 3-merous).

Relationship of Adoxa and Sambucus, Chrysosplenium, or Panax.—The taxonomic
position of Adoxa had been studied by many botanists, who suggested the relationship
of this to the Caprifoliaceae (Sambucus), the Saxifragaceae (Chrysosplenium), and the
Araliaceae (Panax). Since Fritsch (1891) considered Adoxa as to form a distinct
family, the taxonomic treatment as familial rank has been accepted widely. This
recognition is supported by the particular floral diagram, longitudinal division of stamens,
and the inflorescence composed of 2-merous terminal flower and 3-merous lateral ones.
Most of the recent botanists, Rendle (1938), Wagenitz (1964), Cronquist (1968), and
others placed the Adoxaceae in the same order as the Caprifoliaceae following the tradi-
tional concept.

Wydler included Adoxa in the Caprifoliaceae on the basis of his calyx-corolla hypo-
thesis, by which the lateral flower was derived from 5-merous flower resulted from the
reduction of two obliquely anterior calyx-lobes and terminal flower from 4-merous one.
Eichler, Fritsch, Martionvský, and others supported the view that the Adoxaceae
was closely related to the Caprifoliaceae, although the morphological interpretation of
flower is various according to the authors. As mentioned above, I have proposed here
a new idea that the flower of Adoxa is derived from 3-merous flower, chiefly based on the
floral anatomical investigation.

Sambucus was remotely related to the other members of the Caprifoliaceae by me
(FukuoKa, 1972), and there were botanists who suggested the affinity between Sambucus
and Adoxa. Adoxa is similar to Sambucus in: compound leaf, shape of ovary, rotate flower,
gamosepalous calyx, gamopetalous corolla, extrorse anther (except Sect. Scyphidanthae of Sambucus having introrse anther), drupaceous fruit, and single integument of anatropous ovule. According to Moissl (1941), the development of embryo-sac in Sambucus is Adoxa-Type. Erdtman (1952) noted that the pollen grain of Adoxa was morphologically similar to that of Sambucus. From the floral anatomical investigation, the affinity between these two genera is supported as follows: 1) ovary is semi-inferior in Adoxa and Sambucus; 2) the presence of carpellar tissue; 3) placentation is axile in both genera; 4) peripheral bundles give off carpellar supplies at the middle level of ovary; 5) the pattern of vascularization that a central bundle divides into ovular and ventral bundles; 6) large pendulous ovule; 7) the ventral bundles of carpels extending the middle portion of septa at the upper level of ovary.

However, the features of 3), 4), 5), and 7) are observed in a different group as Damnacanthus* of the Rubiaceae who has inferior ovary, solitary and pendulous ovule in each loculus, and axile placentation. Therefore, the resemblance of these features may be resulted from the parallel evolution in correlation with axile placentation, solitary ovule, and inferior ovary.

On the other hand, Adoxa differs from Sambucus in following respects. 1) Habit is herbaceous and small in Adoxa and arboreous or stout herbaceous in Sambucus. 2) Both the genera differ from each other in floral diagram; there are two corolla-lobes between calyx-lobes in Adoxa, but corolla-lobes are alternate with calyx-lobes in Sambucus as in many other families. The flower of Adoxa seems to be regarded originally as 3-merous, though in Sambucus they are usually 5-merous and rarely 3-merous as seen in S. australasia. 3) No gland has been observed on corolla of Sambucus, but a gland is occupied at the base of each corolla-lobes in Adoxa. 4) the vascularization of corolla is simple in Adoxa, but forked or rarely simple in Sambucus. 5) Stamen is monotaceous as the result of longitudinal division in Adoxa and ditaceous in Sambucus. 6) Style is elongate and free in Adoxa, but absent in Sambucus. 7) Stigmas become very thick and are close together in Sambucus, but those of Adoxa are not so thick and separate from each other. 8) Each loculus has a single large ovule in Adoxa, and a large ovule and a rudimentary one in Sambucus. 9) The tissue of ovary does not contain druses in Adoxa but in Sambucus.

De Jussieu (1789) regarded the flower of Adoxa as apetalous, inferior ovary, anatropous ovule, and others, and placed in the Saxifragaceae. Drude included Adoxa in the tribe Chrysosplenieae of this family sensu stricto on the basis of involucr-calix hypothesis. He concluded that the Saxifragaceae was related to the Araliaceae especially to Panax, and Adoxa was the intermediate between both the families. According to his hypothesis, Adoxa has no petal as in Chrysosplenium. The stamens of the former are alternate to calyx-lobes, though the latter has usually diplostaminal stamens. Among them outer ones are opposite to calyx-lobes and inner ones alternate. Drude considered that outer

* Unpublished data.
stamens were reduced and the stamens of Adoxa became to be alternate to calyx-lobes. Sprague supported involucre-calyx hypothesis and the relationship between Adoxa and Chrysosplenium. Hutchinson (1964) placed the Adoxaceae close to the Saxifragales sensu stricto, recognizing calyx and corolla in the flowers.

As mentioned in the foregoing discussion, however, the involucre-calyx hypothesis can not be accepted from the floral anatomical observation. In addition, Chrysosplenium differs from Adoxa in 4-merous flower, introrse anthers, two carpellate ovary, parietal placentation, placenta bearing many ovules, cat-eye-shaped and dehiscent capsule, simple leaf, dichasium-like branching of inflorescence or upper parts of flowering stem and others.

De Candolle (1830) placed Adoxa to the Araliaceae. The affinity between Adoxa and the herbaceous representative, Panax, was suggested by Drude and others. Both the genera resemble each other as: simple stem with rhizome, palmately compound leaf, umbellate inflorescence terminated on a long peduncle, small flower, each loculus containing a pendulous ovule, elongate and free styles, drupaceous fruit, and so on. According to Eyde (1967), and Eyde & Tseng (1971), the ventral bundles of carpels of the Araliaceae do not fuse to a central bundle. This feature is widely recognized through the families allied to that as in Cornaceae, Alangiaceae, Umbelliferae, and Nyssaceae whose ventral bundles are located at the periphery of ovary. The ovary of the Araliaceae contains usually druses (Eyde & Tseng). On the other hand, the Araliaceae differ from Adoxa in 5- to 4-merous flower, free petals, introrse anthers, the absence of corolla gland, and the presence of secretory canal, and floral diagram.

Summary

Adoxa moschatellina is revised from the standpoint of floral morphology and anatomy. A new interpretation is given for the flower of Adoxa, considering the systematic position of it. The ancestral form of the lateral flower is suggested here to be 3-merous. The flower having three calyx-lobes and five corolla-lobes seems to have been derived from typically 3-merous flower by the reduction of a pair of posterior stamens and the fusion of two posterior corolla-lobes.

The lateral flower is regarded as 3-merous, and the terminal one as 2-merous. The flower of Adoxa shows peculiar floral diagram, where are two corolla-lobes between the calyx-lobes.

The relationship between Adoxa and Sambucus, Chrysosplenium, or Panax is discussed briefly in relation to the above speculation.

References

デリハキンバイとコテリハキンバイ

デリハキンバイは1951年北山村四ノ川上流の川岸で発見し、1953年（本誌15巻44頁）、植物分類雑記の頭初に発表したが、その株はその後も京大の園場に鉢植栽培して20数年古に生きつづけている。乾燥した鉢栽培では葉はやや小形になり、特に走出枝（この走出枝はツバツチがそれをかがして非常によく伸びる）上のものは円くなる傾向がある。Typeの株は走出枝や葉柄に比較的毛が少ないが、走出枝上の葉柄には非常に密に開出毛が出ることもある。その後出雲の三刀屋でも丸山厳氏が採集され、私も1958年立久恵（MURATA, No. 11599）でも採集したが、いずれも限られた岩の多い所で、あまり方々ではまだ見つかっていない。鳴橋直弘氏は瀬戸内海地域の宮島や小豆島のものは小形で葉柄に毛が多いとしてコテリハキンバイ（本誌23巻92頁）を変種とした。今年春、植物分類地理学会主催の採集会が小豆島で行われ、この時寒暖流に登る道端に沢山これが生えているのをみつけて、くわしく観察する機会を得たが、土の肥えたところではかなり大きく、毛の多少もこれを変種と見ること可能であると思われる。結局コテリハキンバイは岩場の乾燥や、やせ地で小さくなっただけのもののようにある。


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（村田 源）