

A Review of the Fundamental Structure of Area
or a Contribution to the Theory of Development
of Area with a Particular Reference to the
Distributions of Liliium and its Related
Groups. (2)

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H. Furuike* A Review of the Fundamental Structure
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Distributions of *Lilium* and its Related Groups. (2)

古池博：分布域の発展についての一考察 (⇒)

It is impossible to define an absolute stage of the development of area. Then, through the study of relations between fundamental structure of area and the development of area, we come to the following conclusion. "The area is a super-structure on the mode of living of a natural group that is a stage of evolution of plant"

The distribution of *Lilieae* の 7) 8) is the suitable example to be illustrated. *Lilieae* is a stage of evolution of *Lilioideae* of which ancestor is probably *Heimerocallideae*, though there are opposite views as (9). The evolution is the processes of differentiation of leaves into leaf of assimilation and leaf of storage. Accordingly, *Notholilium* (distributing in Himalaya, Tibet China, Northern Burma, South West China) and *Cardiocrinum* (Himalaya, Tibet, China, Northern Burma, Japan) are the group of initial state such that the base of petioles of the leaf of assimilation of the roset-stage are to be the storage organ of starch, organizing bulblets through the bud-formation or stolon-formation at the axil, consumed all storage for each roset-formation which reproduces the storage for the next and loses its bulb at the flowering-stage, or depends on the monocarpic bulb. Another is of the mode of living such that the leaves of storage are differentiated from the ones of assimilation and that the bulbs grow continuously being lost but adding more scales, accordingly, it is impossible to produce any bulblets in the axil of scales in the bulb. *L. Catesbaei* Walter (Florida, Louisiana, Carolina, of North America) and *L. candidum* Linn. (Europe, Western Asia?) store the starch at the base of petioles of the roset-leaves as a vestage of the ancestor. The other 10 species of *Lilium* distributing in Far East Asia and America have jointed scales.

The latter of the mode is characteristic to the group consist of *Lilium*, *Nomocharis*, *Fritillaria*, *Korolkowia*, which are distributed widely about the northern hemisphere.

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Relatively, the former is at the relic endemic stage, and away metadiscontinuity stage and the latter is at the pandemic stage. Then, the group at pandemic stage is to be analysed in full detail. In the mode of living such that the bulb is non-monocarpic and there is a season in which the stem on the bulb is lost, the axis of the scales of the newly formed bulb can not but be homologous with the axis of the bulblet of the group including *Cardiocrinum*. The owner of the vestage of the bud formation, which is inverted into the branching and come to the rhizomatous bulb, is the group represented by *L. pardalinum* Kellog (California), including *L. Washingtonianum* Kellog (California) and *L. Humboldtii* Roezl et Leichtlin (California). Therefore, the group is in relic endemic stage relatively to *Lilium* as a vicarious group. By the same cause, the bulbs of *L. bulbiferum* Linn. (South Europe), *L. concolor* Salisbury (North East China, Manchurina, Korea, Far East), *L. Henryi* Baker (Central and Eastern China) and *L. regale* Wilson (Western China) are splitting. The group is in metadiscontinuity stage relative to the area of *Lilium*. The larger area constructed of the two groups in metadiscontinuity stage is in opposition to the next stage of concentric bulb in young pandemic stage. The group of concentric bulbs consists of two groups. The one develops the stolon of the group including *Cardiocrinum*, and forms a bulblet at the end of the stolon. There are *L. canadense* Linn. (Eastern North America), *L. Grayi* S. Watson (Eastern North America), *L. iridollae* M. G. Henry (Alabama, Florida), *L. Michiganense* Farwell (Eastern North America) in it. The other distributing mainly in the Old World differentiated the parts of stem to produce the bulblets above the bulb, and the parts of stem under the ground is erected or runs horizontally as in many species of East Asia. Both are not on the same line of evolutionary series and the vicarious groups from common ancestor. The former is in relic endemic and the latter is in initial discontinuity or pandemic stage to *Lilium*. The evolution of *Lilium* is impelled mainly by the differentiation of leaves and the law of correlation subordinates the mode of other characters such as the mode of germination, mode of root, etc. to the process. In Himalaya, South East Tibet, Upper Burma and Western China, there is the group of *Nomocharis* of 14 species, which has *Lilium*-type or non-tonic bulb. It is the intermediate group from *Lilium* to *Fritillaria*, systematically. Therefore, it is in relic endemic stage for *Fritillaria*, and in initial endemic for *Lilium* relatively. *Liliorhiza* Kellog is one of the section of *Fritillaria* which has the bulbs of several fleshy scales or rice-grain bulblets (homologous with the lamina of the scale and has not tunic nor squamose. It is distributed from California as far as Central Japan and Far East along west coast of North America. It is in vicarious relic endemic stage to *Fritillaria* of tunicated and of squamous bulbs. The bulb differentiated into tunicated one or decreased the number

of scales. Accordingly, it developed the function of storage more and more through the stages of such sectionis as *Eufritillaria*, *Petiliium*, *Thresia*, *Amblirion* etc., and came to the genus *Korolkovia* as a limit of evolution of scale of storage organ.

Thus, the evolution of *Lilieae* is the process of correspondence such that the increase of vitality mainly by the differentiation of function of leaves bring about the change of the mode of vegetative reproduction, and the area of each stage of evolution of the mode of living is in such mode as proposed above.

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摘 要

- 1) 植物の生活の基礎的単位である発育段階がつくりだす諸関係は、生活様式の進化の一段階としての自然群をもたらす。
- 2) 分布域は、この様な自然群の上になりたつ構造であるから、その発展系列は、自然群の進化における段階性を反映する。
- 3) つまり初期固有は、古い種の不連続期の海、わけてもその周辺部における小島として生まれ、広布期へ育ち、その内により新しい種の初期固有をもたらし、自分自身は後不連続期に転化し、おいつめられて、より新しい種の海の内の小島としての遺存固有から、やがて没し去つてしまう。以上、種についてみたような、新しいものと古いものとの相対的關係においてのみ、分布域の発達段階が存在しうる。帰結するところ、正宗教授の所説に導かれることになる。
- 4) *Lilieae* の分布は、この事をよく示している。

Errata

In the previous part of the article, there are some serious errata in the text. They are to be corrected as follows : Vol. VIII, No. 1, p. 10, 7, 10, 12, 15 th. line ; low→law

○セツブンソウの一品種 (大原準之助) J. Ôhara : A New Form of *Eranthis pinnatifida* Maxim.

1959年3月末鈴鹿山脈の藤原岳(1,165m)にて西三河植物研究会会員粟田忠史,早川修両君の協力により,セツブンソウの八重咲き品を発見した。三重県員弁郡藤原村字坂本の聖室寺から登る鳴谷沿いの林内である。この山は石灰岩地でセツブンソウがかなり豊産し丁度中腹のものは開花期にあたつていたので登山道に沿つて隅なく調べることができた。その結果縮小密槽化した花卉も通常の花卉のように大きくなり,それに続いた雄蕊もほぼ完全に弁化した八重咲きのもの二株を得た。新品種としてヤエザキセツブンソウと命名する。色々御教示を賜つた名市大の豊島鍊三先生に深謝する。

Eranthis pinnatifida Maxim. form. plena Ôhara. f. nov.

Flores pleni.

Nom. Jap. Yaezaki-setsubunsô. (nov.)

Hab. Hondo : in monte Fujiwara-dake, Prov. Ise. Leg. J. Ôhara, III. 26, 1959-
Typus in Herb. Nagoya City Univ.

○四国,九州のカタイノデ (倉田 悟) S. Kurata : *Polystichum Makinoi* Tagawa in Shikoku and Kyûshû.

カタイノデは千葉県,東京都以西南の本州の暖地に広く分布し,空中湿気に恵まれた深山を好んで生育する。しかし,四国,九州ではむしろ珍しいシダの一つであり,従来,同地方のカタイノデとして報告されたものは,他のイノデ類を誤認したことが多い。以下,私の確認し得た標本の産地を列举する。伊予五良津(児玉親輔?, 1929年,山口大学文理学部),伊予周桑郡石槌村土居(越智一男, 1958年),土佐本山町(村田源, 1957年,京都大学理学部),肥後内大臣山(中島一男, 1937年,同),肥後黒原山(乙益正隆, 1958年),肥後白髪岳(同),肥後人吉(児玉親輔?, 1929年;前原勸次郎, 1958年),薩摩大口市布計(倉田悟, 1958年),薩摩矢筈岳(土井美夫, 1930年,京大理)。終りの産地は熊本県水俣市との境の矢筈岳(687m)であろうから,此所が西南限産地である。今後,徳島,福岡,大分,宮崎の諸県に発見を期待する。尚,支那大陸にもカタイノデに一致するものを産するが,更に検討を加えた上で別に報告したい。