

論 説

花粉散布様式と花の性表現 I

田 中 肇*

Sex expression of anemophilous and entomophilous plants. I

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植物は花粉散布様式が異なると種の性表現にも違いが表れる。今、田中（1976）の著書から花粉散布様式と性表現の明らかな被子植物190種をぬき出し、その関係をTable 1として示した。

風媒花が雌蕊の受粉率を高くするには、できるだけ短期間に全ての花粉を散布し、大気中の花粉濃度を高めるほうが有利である。そのためには雌雄蕊の成熟時期を一致させる必要がある。しかし、両性花で雌雄の成熟期を一致させると、同花受粉の機会が多くなってしまい、他家受粉の率が下ってしまうことになる。そこで、雌雄の熟期を一致させ、しかも他家受粉率を立めるため、風媒植物は葯と柱頭を離す方向に進化した。

そのとき、チガヤやススキなど長い花糸によって葯

と柱頭を離している長花糸型（Longistamineus）では両性花のみをつける（Monoclinous）種の率が高い。一方、そのような雌雄の隔離方法をとらなかったコナラやスイバなど他の型の風媒花では雄蕊と雌蕊を異なる花につける雌雄異花（Diclinous）の種の出現率が高くなっている。

虫媒花ではクリやイタドリのように雌雄異花になったばあい、訪れる昆虫は蛋白質源である花粉を採取するため雄花にのみ多く集まってしまう傾向があり、生殖に費すエネルギーの支出が多くなってしまふ。そのような損失を避けるため、虫媒花では両性花のみをつける種の率が高くなったものと考えられる。

この論文を上野教授定年記念号に寄せる。

Summery

Sex expression in Angiosperms were different in pollination systems as shown in table 1.

Table 1. Number of species related to pollination types and sex expression.

Sex expression	Pollination type	Anemophilous		Entomophilous
		Longistamineus	Other types	
Diclinous	(a)	2	18	6
Gyno- or andro-monoecious	(b)	4	5	14
Monoclinous	(c)	20	4	117
Total		26	27	137

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論 說

Ephedripities taiwanensis Huang sp.nov. (1)

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Pollen grains of *Ephedripities taiwanensis* are characterized by being inaperturate, perprolate and bearing six or eight ridges which are more or less parallel to the long axis and convergent at both ends, 44-48 μ 12-15 μ wide in central portion, 5-9 μ wide at the ends. Ridges 1-2.5 μ wide in central portion. Valleys between two ridges approximately 0.5-1 μ wide. Exine smooth, 0.5 μ thick.

This new species is one of the fossil forms of the extant genus *Ephedra* which belongs to the family Ephedraceae, and the order Gnetales of the Gymnosperms. It has been compared with the limit references at hand, but is considered a new taxon.

The specimens were collected from scattered locations, at least, in the Nankang Sandstone (Peliao Sandstone Member) and the Kueichulin Formations (Shihliufen Shale Member) in the Chuhuangkeng oil field in Miaoli county and belongs to the Miocene period. There have been no extant species of *Ephedra* in Taiwan since the Miocene.

The holotype slide is ML54-2R collected at the Shihliufen Shale Member, and the type photos or film numbers are 37 : 36-37. The topotype slide is ML28-1L collected at the Peliao Sandstone Member, and the type film number is ML48 : 15.

In the August 17, 1974, I had the opportunity to visit Dr. J. Ueno, President of Palynological Society of Japan, and professor at Shizuoka University. Prof. Ueno is well known for his contributions on palynological work, especially on the study of Gymnosperms pollen grains. This new species is dedicated to him for publication in the Memorial Issue on the occasion of his retirement from Shizuoka University in the March 1977. During my one day's visit, I was deeply impressed by not only his well equipped laboratory, but also his well prepared teaching techniques for palynology. He made out of gum more than 50 pollen models which include all of the most important types of pollen grains and these are adequate enough for teaching, I noticed, at once, that such models would be very useful for teaching any course in palynology. Such models of pollen grains are rarely found in any of the palynological laboratories which I have visited elsewhere, whether in Japan, the United States of America, Sweden, France, the Netherlands, or West Germany. I hope I can see them produced commercially in the future, so that palynological courses can be offered more efficiently.

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