Geographical Distributions of *Carices* indigenous to the Far Eastern Region of Asia*

By

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There are 347 spp., 76 varr. and 10 forms of *Carices* in the Far Eastern Region of Asia, i. e. Southern Saghalien, Hokkaidō, Honshū, Shikoku, Kyushū, Formosa, the Korean Peninsula, the Kurile and the Loochoo Islands, and the Bonin and the Oriental South Sea Islands. The genus comprises sixty-one Sections.

Four cultivated varieties (with white striated leaves) and one transplanted variety are excluded here.

The localities of each species differ not only oecologically but also geographically, and the extensions or the limitations, and the courses or the connections of the distributions of the species have certain tendencies with respect to each species or each group of the species.

The present work deals with the facts of the geographical distributions of *Carices*, and some reasons concerning them.

I. DISTRIBUTIONS OF SECTIONS

Out of sixty-one Sections, seven are endemic, and about five mainly occur here and are distributed among Ussuri, Manchuria and China Proper; these twelve Sections are ca. 20% of all Sections. Five other Sections are limited in their localities to Eurasia, and all other fifty-four Sections are distributed widely in the world like girdles surrounding it, some Sections occurring intermittently, and such species as belong to *Praecoces*, *Ferrugineae*, *Fuliginosae*, *Graciles*, *Montanae*, etc. being more numerous in this Region than in others.

The habitats of species of a Section resemble those of another, for example, those belonging to *Heleonastes*, *Limosae*, *Dioicae*, etc. are found mostly in districts of high latitudes, and *Polystachyae* and others occur

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only in southern districts, and many of *Anomalae*, *Decorae*, *Ferrugineae* and *Graciles* are distributed in southern districts. Many species belonging to *Praecoces*, *Scitae*, *Rhomboidales*, *Podogynae* and *Graciles* are narrowly distributed.

Since extensions of the distributions of Sections are too wide to be particularly defined, the writer attempts to investigate the distributions rather minutely from the standpoint of species.

TABLE I. Species numbers in the Sections existing in the Region

Localities / Sections	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other districts	Total
Acutae											
-Cryptocarpae	6spp.	3spp.	3	2					2		6
-Forficulae	1	1	4	5spp., 1v.	2	3, 1			2, 1		5, 2
-Praelongae		2	7, 1	9, 3	4, 1	5, 1	2	2, 1	4, 2		11, 4
-Thunbergiae	5spp., 1v., 1f.	6, 2	5, 2, 1	5, 2	2				5, 1		15, 4, 2
Albae									1		1
Alliiformes						1	1	2			2
Anomalae				1, 0, 1	1	1	1	1	1		2, 0, 1
Arenariae	1	1	1	1					3		3
Atratae	3	4	6	6, 1	1	2		2	8		14, 1
Callistachys	1	2	1, 1	1, 1							2, 1
Capillares	2	3, 0, 1	2	1					4		4, 0, 1
Capitellatae	1, 1	0, 1	4, 1	6, 2	2	3			7, 1		8, 2
Circinatae		1	1	1							1
Confertiflorae	1	1	4	8, 1	7	7	4	2	5		10
Cyperoides			1	1							1
Debiles		1	1	2	2	2		2	1		4
Decorae				2	1	1		1			3
Deweyanae				1							1
Digitatae	0, 1	0, 1	4, 1	5, 1	2, 1	2, 1		3	7, 2		11, 3

Localities / Sections	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other districts	Total
Dioicae	2	1	2	1							2
Dispermae	1		1						1		1
Divisae	1	1	1	1					3		3
Extensae	1	1	2	1							2
Ferrugineae	0, 2	0, 1	1, 2	4, 2	3	6	1	4	0, 1		10, 4
Foetidae	1	1	1	1		1			1		1
Fuliginosae	1	1		1				2	1		6
Gibbae				1	1	1					1
Glaucaeformes									1		1
Graciles				7	5	5	2	5	3	2	13
Grallatoriae				1, 1	1, 1	1, 1		0, 1			1, 1
Heleonastes	10	8	9, 1	6					3		12, 1
Hirtae	1		3	4	1	3		2	4, 2		8, 3
Hymenochlaenae	1			1	1	1	1	1	2		2
Indicae						1	1	3, 1			3, 1
Limosae	2	5	3	3							5
Lupulinae		1	1	1							1
Macrocephalae	1, 0, 1	1, 0, 1	2	1	1, 0, 1	1		1	1, 0, 1		2, 0, 2
Macroglossae	1	1	3	5, 2	1	3, 1		1	5		9, 3
Molliculae	2	1	5	7	4	4	1	3	5		8
Montanae	5	2	3	4, 1, 1	1	1		1	4, 1		9, 2
Multiflorae			1	5		1		1	4		7
Ovales		1	1	1		1			1		2
Pacificae				1	1	1		1			1
Paludosae	2		3	3	2	2	2	2	5		6
Paniceae	1, 1	1, 1	2, 1	2					2		2, 1
Paniculatae	1	1	1	1							1

Localities / Sections	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other districts	Total
Pauciflorae	1	1	1	1					1		1
Phaeothrices									1		1
Physocarpae	5	6, 3	3, 1	3, 1		1			5, 1		8, 3
Planatae			1	1, 2		0, 1					1, 2
Podogynae			1, 1, 1	8, 0, 1		1					9, 1, 1
Polystachyae								1, 1			1, 1
Praecoces											
-Cryptostachydeae								1			1
-Lageniformes				1		2	1	4	2		5
-Foliosissimae	1		3	4, 2	2	2, 1		1	1		6, 3
-Leucochlorae	1	1	4	9, 3	3	4	3	4	2		13, 3
-Nervatae	3	2	4	5, 2	2	2, 1		0, 1	4, 1		6, 4
-Pisiformes	1	1	3	14, 7, 1	9, 1	15, 4	3	6	4		26, 10, 1
Pseudocypereae			2	2					1		2
Remotae	1		1	2	1			1	1		3
Rhizopodae		1	1	1	1	1					1
Rhomboidales		2	2, 1	8, 3, 1	2, 1	1, 1	3	4	7, 1	3	16, 3, 1
Rupestres	1								1		1
Scabrellae										1	1
Scitae	1, 1	2, 5	1, 3	6, 1							8, 6
Siderostictae			1	3, 3	4	2			3		4, 3
Stellulatae		2	2, 1	1, 1		2			1		3, 1
Tentaculatae			1	1	1	1					1
Vulpinae			1	1							1

II. Distributions of Species (Varieties and Forms)

With respect to the number of the species Honshū ranks first, and next to it come, in order of number, Korea, Hokkaidō, Kyushū, Shikoku,

the Kuriles, Southern Saghalien, Formosa and the Loochoos, etc. (Tab. III.).

Though generally speaking, the number of species found in each district is influenced by the broadness and the climatic and edaphic conditions of every land, yet the following may be said when each particular case is taken into consideration: 1. The number is large in the Kuriles and the Loochoos compared with their areas as they are the connections of small islands occupying rather broad areas and forming the connecting routes of their adjoining districts. 2. Shikoku and Kyushū are closely adjacent to Honshū and there exist many similar species to those in Honshū, in spite of the smallness of each land. 3. As Honshū stretches from south to north more conspicuously and more complex in edaphic conditions compared with Korea, much more species are found in Honshū than in Korea. 4. Southern Saghalien is almost equal in number of the species to Formosa which keeps many species as it does with other plants, and this fact suggests us that *Carices* occur more abundantly in northern districts.

1. Endemic species

As many as 204 spp., 7 varr. and 8 forms, or 63% of the whole are found only in this Region, and this numerousness of endemic species in a genus is an extraordinary phenomenon among the Spermatophytes. This may be due to the fact that *Carices* are perennial and dispersions of the seeds are rather narrower, but at the same time it may be suggested that with this genus new species are produced rather in a short time (cf. II. 7).

Of these endemic species, the number of species distributed in one district only is shown below with its percentage compared with all species of the genus growing in it:

The Kuriles 3 spp., 3 varr. & 1 f. 7%; Southern Saghalien 2 spp., 3 varr. & 1 f. 6%; Hokkaidō 5 spp., 2 varr. & 1 f. 5%; Honshū 46 spp., 27 varr. & 3 ff. 32%; Shikoku 2 spp. 2%; Kyushū 7 spp. & 4 varr. 10%; the Loochoos 1 sp. 4%; Formosa 29 spp. & 2 varr. 43%; the Korean Penins. 11 spp. & 6 varr. 12%; the Bonins 3 spp. 75%; South Is. 1 sp. 50%.

The species in Shikoku are intimately related to those of Honshū, so that the endemic species of Shikoku are scarce. As Honshū occupies rather a broad area it owns endemic species of various kinds, and if we divide Honshū into smaller districts, each shows a lower percentage. The Korean Peninsula presents a small percentage as it is connected

to the Continent by land.

In short it may be said that we can find a comparatively large number of the endemic species in the southern districts, considering the general scantiness of the species in those districts.

2. Species distributed in outer regions as well as in this Region

These are 141 spp., 13 varr. and 2 forms, or 37% of the whole. From the viewpoint of their distributions outside this Region, they may be divided into the following thirteen kinds:

a. Species found in Siberia, Northern China Proper and Manchuria as well 66 spp., 3 varr.

Those may be divided into northern and southern elements.

b. Species which are circumpolar or close to circumpolar species 22 spp., 3 varr.
c. Species found in North America 12 spp., 1 f.
d. Species found widely in Eurasia 10 spp., 1 var.
e. Species found in Himalaya 8 spp., 1 var.
f. Species found from Central to Northern China Proper 6 spp.
g. Species found from Central to Southern China Proper 5 spp., 1 var.
h. Species found from India to Southern China 6 spp., 1 var.
i. Species found in China and the South Sea Islands 1 sp.
j. Species found in Australia 2 spp.
k. Species found in Europe, North and South America 1 sp.
l. Species found sparingly in the world 2 spp.
m. Species surrounding the Japan Sea and the East China Sea 2 spp.

These facts show us that there exists an extraordinarily large number of *Carices* in this Region belonging to the flora of Eastern and North-eastern Asia.

Connecting routes to this Region from outer regions are the following seven kinds:

A. Continent—Korea

It is easy to conjecture that there exists a route, as they are connected by land. Continental species existing only in Korea and no other places in this Region are 22 spp. and 2 varr., of which 1 sp. is circumpolar and all the others are distributed in North-eastern Asia. Those growing on the Continent of Asia, Korea and Japan are 18 spp. and 2

varr., of which 2 spp. are distributed in India and Himalaya, and all the others are elements of North-eastern Asia. There are 42 spp. and 3 varr. which grow in Korea coming there by this route and which also grow in Formosa, Saghalien and Japan coming to them by other routes from the Continent of Asia, of which 12 spp. are elements circumpolar, 7 spp, and 1 var. of Eurasia, 18 spp. and 2 varr. of North-eastern Asia, 2 spp. of Himalaya and 3 spp. of North America. Sum total as above mentioned: 82 spp. and 7 varr., all of them are connected by this route.

B. Continent—Southern Saghalien (the Mamiya Strait)

The sum total supposed to take this route is at least 46 spp., 1 var. and 1 f., of which 4 spp. are found in Southern Saghalien and no other places in this Region, and 2 other spp. enter Honshū through Korea—Honshū as well. Elements of North-eastern Asia are 23 spp. and 1 var. (1 sp. of them grows from Himalaya to East Asia), circumpolar 14 spp., of Eurasia 5 spp. and of North America 2 spp. and 1 f.

C. Kamtchatka—the Kuriles

There are 49 spp. and 4 varr. which choose this route, and 13 spp. of them take this route only, and the others come to this Region also through Korea or Saghalien from the Continent of Asia. Elements of North-eastern Asia are 15 spp. and 2 varr. (1 sp. is distributed as far as Himalaya), of Eurasia 16 spp. and 1 var., circumpolar 9 spp., of North America 8 spp. and of Europe and South America 1 sp.

We can notice here that the species of circumpolar and North American elements take this route more often than the foregoing two routes.

D. South China—Formosa (the Formosan Strait)

There are 14 spp. and 1 var., of which 3 spp. are found in South China and Formosa only, and the others are distributed in India, Himalaya and the South Sea Islands, 1 sp. going as far as Madagascar; 4 spp. of them grow in high mountains in southern districts, and are not found close by the strait, and although they are so situated, it is appropriate to include them in this route division.

E. The Philippines—Formosa

The species common to the Philippines and Formosa are 3 spp. As they are all widely distributed in southern regions it cannot be said that there exists the route; rather it is suitable to think that there is a line of demarcation between the Philippines and Formosa (cf. II. 6).

F. Central China—(Southern Korea)—Western Japan (the Yellow Sea or the East China Sea)

Carex laticeps, *C. poculisquama* and *C. Paxii* are found in Central China,

Southern Korea and Western Japan, and *C. Idzuroei*, *C. maculata* f. *viridans*, *C. nemostachys* (from Himalaya), *C. aequialta* and *C. Rochebrunii* are found in China and Japan and not in Korea. About seven other species which are found in Japan passing by other routes from the outer regions, are thought to pass this route as well (cf. II. 5).

G. Other connections than those above mentioned

i. Australia—this Region

Common species are 2 spp., and there are several Australian species closely resembling those of this Region (cf. II. 6, 7).

ii. Sea Current (cf. II. 5).

iii. Species of discontinued distributions

These are *Carex Buxbaumii* and *C. pseudo-Cyperus*, widely and dottedly distributed in the world, and *C. atrata*, *C. cyperoides* and *C. quadriflora*, discontinuously distributed at least in this Region. Perhaps these are relic plants or species lacking suitable habitats in this Region. *C. Buxbaumii* and *C. pseudo-Cyperus* seem to have been distributed in an earliar period, *C. atrata* may be considered the remainder of the Ice Age, and *C. cyperoides* and *C. quadriflora* seem to lack suitable habitats in this Region, for *C. cyperoides* grows in the localities on the lake sides of the volcanoes in Hokkaidō and Honshū, and *C. quadriflora*, in the case of Hokkaidō, on a certain mountain constituted of basalt.

3. Types of connections within this Region

Rarely we find out one and the same species in two localities isolated from each other, and such cases occur in 7 spp., ca. 2% of the whole, but most of *Carices* show linear or girdling arrangements in their localities. The writer classifies the types of connections within this Region in the following thirty-two kinds.

i. Saghalien—Hokkaidō 9 spp.

Endemic species are 4 spp. The others connect to the outer regions through the Mamiya Strait, and 2 spp. of them are also found in Korea.

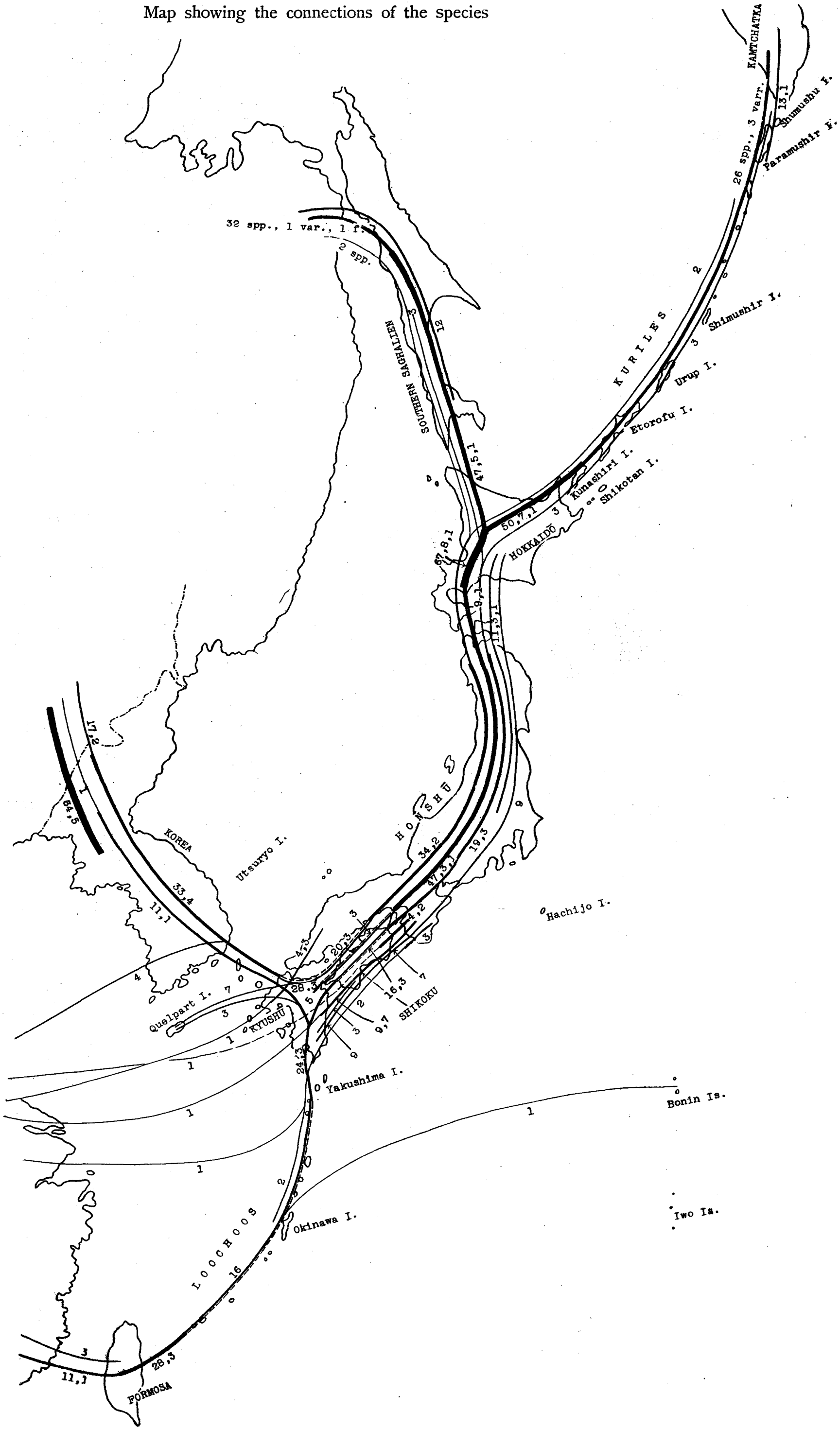
ii. Saghalien—Hokkaidō—Honshū 8 spp., 1 var.

Endemic species are 2 spp. and 1 var.; other 6 spp. connect to the Continent of Asia through the Mamiya Strait, and 5 spp. of them are also found in Korea.

iii. The Kuriles—Hokkaidō 5 spp., 2 varr.

Endemic species is 1 var., all others connect to the other regions through the Kuriles, and 4 spp. and 1 var. of them are also found in Korea.

Map showing the connections of the species



iv. Saghalien, The Kuriles—Hokkaidō 6 spp., 3 varr., 1 f.

Endemic species are 2 spp. and 3 varr.; 1 sp. connects to the outer regions through the Kuriles and all the others through Saghalien, and 3 spp. of them are also found in Korea.

v. Saghalien, The Kuriles—Hokkaidō—Honshū 22 spp., 1 var.

Of these 8 spp. are found in the south of Is. Urup in the Kuriles. Endemic species are 5 spp., all the others are also found in the outer regions, and 11 spp. of them are also found in Korea. Through both Saghalien and the Kuriles 13 spp. and 1 var. connect to the outer regions, and 4 spp. through Saghalien only.

vi. Saghalien, The Kuriles—Hokkaidō—Honshū—(Shikoku)—Kyushū 2 spp.

Endemic species is 1 sp.; 1 other species connects to the outer regions through Saghalien and the Kuriles and is not found in Shikoku.

vii. The Kuriles—Hokkaidō—Honshū 12 spp., 1 var.

Endemic species are 5 spp., and 4 spp. of them are found in the south of Is. Kunashiri in the Kuriles, and 1 sp. goes as far as Is. Quelpart; other 7 spp. and 1 var. connect to the outer regions through the Kuriles, and 2 spp. of them grow in Korea. There is 1 sp. lacking to the Southern Kuriles and Hokkaidō, but it is appropriate to include it here.

viii. The Kuriles—Hokkaidō—Honshū—(Shikoku)—Kyushū 3 spp.

All are endemic species, and are found in the south of Is. Urup in the Kuriles, and 1 sp. of them is not found in Shikoku.

ix. Hokkaidō—Honshū 11 spp., 3 varr., 1 f.

Endemic species are 8 spp., 2 varr. and 1 f.; the others are also found in other regions, but their connecting routes are uncertain.

x. Hokkaidō—Honshū—(Shikoku)—Kyushū 9 spp.

All are endemic species, and 2 spp. of them are not found in Shikoku.

xi. Honshū—Shikoku 4 spp., 2 varr.

To northern China Proper 1 sp. makes its way, and all the others are endemic.

xii. Honshū—Kyushū 5 spp., 3 varr.

Endemic species are 3 spp. and 3 varr.; 2 other species are found in Central China.

xiii. Honshū—Shikoku—Kyushū 9 spp., 1 var.

There are endemics, except 1 sp. connecting to Central China.

xiv. Honshū—Shikoku, Kyushū—the Loochoos 3 spp.

From Kyushū or the Loochoos 1 sp. connects to Central and Southern China; the other two are endemic, and 1 sp. of the two is not found in Shikoku and the other species not in Kyushū.

xv. Honshū—Shikoku—Kyushū<Is. Quelpart / the Loochoos 1 sp.

This is endemic.

xvi. Korea—Honshū 6 spp.

Endemic species are 2 spp., and the other 4 spp. connect to Central China, not passing through northern Korea (cf. II. 2. F. & II. 5).

xvii. Korea—Shikoku 1 f.

This is endemic.

xviii. Korea—Kyushū 3 spp., 1 var.

There is 1 var. connecting to the Continent; all the others are endemic.

xix. Korea—Kyushū—Shikoku—Honshū 10 spp.

Endemic species are 4 spp., of which 2 spp. grow on Is. Quelpart of Korea; other 6 spp. are found also in Manchuria, and 1 sp. of them lacks its locality in Shikoku.

xx. Korea—Kyushū or Shikoku—Honshū—Hokkaido 16 spp., 2 varr.

Endemic species are 6 spp., of which 2 spp. are not found in Shikoku and 1 other sp. not in Kyushū, and 1 var. reaches to Is. Shikotan in the Kuriles.

xxi. Korea—Kyushū—(Shikoku)—Honshū—Hokkaidō<Saghalien / the Kuriles 2 spp.

The localities of these surround the Japan Sea, and 1 sp. is not found in Shikoku.

xxii. Korea—Kyushū<the Loochoos / Shikoku—Honshū—Hokkaidō 2 spp.

These are endemic.

xxiii. Formosa—the Loochoos 4 spp.

Endemic species are 3 spp., and 1 sp. of them finds its way to Is. Yakushima; 1 other sp. is distributed in South China.

xxiv. Formosa—(the Loochoos)—Kyushū 3 spp.

Endemic species is 1 sp., which is not found in the Loochoos; 2 other spp. connect to the outer regions through the Formosan Strait.

xxv. Formosa—(the Loochoos)—Kyushū—(Shikoku)—Honshū 5 spp., 2 varr.

Endemic species are 3 spp. and 2 varr., all lacking their localities

in the Loochoos and 1 sp. is not found in Shikoku; 2 other spp. connect to the outer regions through the Formosan Strait.

xxvi. Formosa—the Loochoos—Kyushū—Shikoku 1 sp.

This is endemic.

xxvii. Formosa—(the Loochoos)—Kyushū<Korea / Honshū 5 spp.

All are endemic species, among them 4 spp. are not found in the Loochoos, and 2 spp. attain their localities, to Is. Quelpart and 1 sp. to the Bonin Is.

xxviii. Formosa—(the Loochoos)—Kyushū<Quelpart / Shikoku 1 sp.

This is ecdemic.

xxix. Formosa—(the Loochoos)

—Kyushū<Korea / Shikoku—Honshū—Hokkaidō 6 spp., 1 var.

All these are connected to the outer regions through the Formosan Strait, and 1 var. is not found in the Loochoos.

xxx. Formosa—Kyushū—Shikoku—Honshū

—Hokkaidō<Saghalien / the Kuriles 2 spp.

Through the Formosan Strait 1 sp. connect to the Continent, and 1 other sp. is found near the sea coast of China.

xxxi. Species showing the extremities of the distributions from the outer regions

In Korea 64 spp. and 5 varr. mark the end of their distributions from the Continent, while 39 spp. and 3 varr. of them also enter this Region from the Continent passing through the Kuriles or Saghalien. In Saghalien 12 spp. of these kinds appear, and 11 spp. of them enter this Region also through Korea or the Kuriles. The Kuriles have 13 spp. and 1 var., and 1 var. of them enters this Region also through Saghalien and Korea from the outer regions. In Formosa 4 spp. mark the end of their distributions from the Continent.

xxxii. Uncertainty of route 7 spp.

Endemic species is 1 sp., and the 6 other spp. are found also in the outer regions, of which 3 spp. of Korean localities evidently connect to the Continent.

As shown in Table III., 96 spp., 9 varr. and 1 f. are shared by Honshū and Hokkaidō, which is the most remarkable feature in having common species, and next to that, in order of numerousness, come Honshū—

Kyushū, Honshū—Korea, Honshū—Shikoku, Shikoku—Kyushū, Hokkaidō—Korea, Saghalien—Hokkaidō, the Southern Kuriles*—Hokkaidō, and Kyushū—Korea, etc., while on the other hand there are no common species between the Northern Kuriles* and the Loochoos, and in other districts at least one species is commonly found.

In Saghalien there are about half of *Carices* found in the Southern and the Northern Kuriles, about 20% of those in Hokkaidō, Korea and Honshū, and less than 10% of those in other districts. Hokkaidō has many species in common with other districts, i. e. 82% of those of the Southern Kuriles and about half of those of other districts except Formosa and the Loochoos. Honshū, however, has in high percentages species growing in other districts, except Formosa and the Northern Kuriles, and the occurrences of more than 80% of those of Shikoku and Kyushū are remarkable. Shikoku and Kyushū have common species of southern elements, and the Loochoos and Formosa show low percentages in having species in common with other districts. Korea possesses about 40-50% of those of other districts, excepting Formosa and Honshū. Honshū occupies the largest area in the central position, and edaphic conditions are complicated, and as a result contains most plentifully species common with other districts. Hokkaidō and Korea come next to Honshū in the high percentages of the common species.

The mean numbers of the percentages of the common species existing between two neighbouring districts are : Saghalien—Hokkaidō 56%, Hokkaidō—the Southern Kuriles 61%, the Southern Kuriles—the Northern Kuriles 52%, Hokkaidō—Honshū 61%, Honshū—Shikoku 59%, Honshū—Kyushū 59%, Shikoku—Kyushū 74%, Kyushū—the Loochoos 50%, (Kyushū—Formosa 34%), the Loochoos—Formosa 48%, Kyushū—Korea 43%, (Honshū—Korea 44%).

This shows us that the percentages are somewhat higher in northern districts and lower in southern districts (Shikoku and Kyushū lie closely adjacent to Honshū and accordingly the percentages are large), but slightly lower between the Northern and the Southern Kuriles. Generally speaking, in percentage the classified areas are rather approximate to one another, and as for *Carices* there does not exist any remarkable boundary line except in the case between the Northern and the Southern Kuriles (cf. II. 4. b).

* In this chapter the Kuriles were divided into Northern (from Is. Shimshir northwards) and Southern (from Is. Urup southwards) districts. As the Bonin Is. have 1 sp. common to the southern parts of Honshū and the South Sea Is. have no common species, these islands are excluded here.

TABLE II. Geographical distributions of species, varieties and forms

(The mark + denotes the occurrence of species in the respective districts)

Species \ Localities	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
Carex aequialta KÜKENTHAL				+		+					China
C. albata BOOTT			+	+							Endemic from Kinki in Honshū to Hokkaidō
C. alliiformis C. B. CLARKE						+	+	+			Central China
C. alterniflora FRANCHET			+								Endemic
C. amgunensis FR. SCHMIDT	+										Manchuria, Mongolia, Europe and Siberia
C. angustisquama FRANCHET			?	+							Endemic northward from Tōhoku
C. aphanolepis FRANCHET et SAVATIER			+	+	+	+					Endemic
C. aphyllopus KÜK.				+	?						Endemic
var. *paludicola* OHWI				+							Endemic in Chūbu
C. apodostachya OHWI								+			Endemic
C. apoiensis AKIYAMA			+								Endemic
C. aquilonalis AKIY.				+							Endemic in Mutsu
C. arenicola FR. SCHM.	+	+	+	+		+			+		North China. Southward from Etorofu I.
C. arisanensis HAYATA								+			Endemic
C. Arnellii CHRIST	+								+		Manchuria, Mongolia, Eastern Siberia. Northern Korea and Saghalien
C. atrata LINNAEUS	+			+					+		Dottedly in high mountains or cold regions in the northern hemisphere. Northern Korea, Chūbu in Honshū and Saghalien
C. atroviridis OHWI						+					Endemic in Yaku I.
C. Augustini TUYAMA										+	Endemic in Iwō I.
C. Augustinowiczii MEINSHAUSEN	+	+	+	+				+			Eastern Siberia, Manchuria and Kamtchatka
v. *macrocarpa* OHWI	+										Endemic
C. autumnalis OHWI				+	+	+	+				Endemic in Chūgoku in Honshū, Shikoku, Kyushū, and Okinawa I.
C. baccans NEES								+			From India, South China to Java
v. *pallida* SAITAKE								+			Endemic

Species \ Localities	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. bilateralis HAYATA								+			Endemic
C. bipartita ALLIONI v. *scaber* AKIY.		+	+	+					+		Kamtchatka, ? North America. The Northern Kuriles, Central Honshū and Northern Korea
C. biwensis FRANCH.				+	+	+			+		From Eastern Siberia, Manchuria to North China
C. blepharicarpa FRANCH.			+	+	+	+					Kamtchatka
v. *ducensis* AKIY.	+		+	+							From Chūbu in Honshū to Northern Saghalien
v. *stenocarpa* OHWI				+							Endemic in Chūbu
v. *insularis* NAKAI									+		Endemic in Utsuryō I.
C. Boottiana HOOKER et ARNOTT				+	+	+	+	+	+	+	Northward from Kōtō I. of Formosa, Quelpart I. of Korea, Bonin Is. and westward from Kantō in Honshū
C. bostrichostigma MAXIMOWICZ				+	+	+			+		Manchuria, Ussuri. Westward from Kansai in Honshū
C. brachyathera OHWI								+			Endemic
C. brevicuspis C. B. CL.								+			South China
C. brunnea THUNBERG				+	+	+	+	+			From the Philippines to Australia
C. brunnescens POIRET f. *sphaerostachya* AKIY.	+	+	+	+							Eurasia, North America
C. Buxbaumii WAHLENBERG	+	+	+								Eurasia, North America, North Africa, Australia. Shikotan I. in the Kuriles
C. caespitosa L.	+	+	+	?					+		Northern Eurasia. Shikotan I. in the Kuriles and northern parts of Korea
v. *hyalinosquamis* AKIY.	+										Endemic
C. canescens L.	+	+	+	+					+		Arctic and Antarctic circumpolar. Northward from Chūbu in Honshū to the South Kuriles, the North Kuriles and Northern Korea
C. capillacea BOOT.			+	+		+			+		High localities from India to Manchuria and North Korea
v. *sachalinensis* OHWI	+	+	+	+					+		Northern Korea, the Southern and the Northern Kuriles, and northward from Chūbu in Honshū
C. capillaris L.	+	+	+						+		Northern Eurasia. The Northern Kuriles and Northern Korea
C. capricornis MEINSH.			+	+					+		Manchuria and Eastern Siberia. Dottedly in Northern Korea and Kantō in Honshū
v. *latifolia* HONDA				+							Endemic

Species \ Localities	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. caudatifrons Akiy.				+							Endemic in Rikuchū
C. chishimana Ohwi		+									Endemic in the Northern Kuriles
C. chordorhiza Ehrhart									+		Eurasia and Northern North America. Northern Korea
C. chosenica Ohwi									+		Ussuri. Northern Korea
C. chrysolepis Franch. et Sav.					+	+					Endemic
C. ciliatomarginata Nakai				+	+	+			+		Manchuria. From Korea, Tushima I. to Chūbu in Honshū
C. cinerascens Kük.				+							Endemic in Kantō and Tōhoku
C. clivorum Ohwi				+							Endemic in Kantō and Chūbu
C. collifera Ohwi							+				Endemic in Okinawa I.
C. concolor R. Brown		+							+		Cold regions of the northern hemisphere. Northern Korea, and the Northern and the Middle Kuriles
C. confertiflora Boot.			+	+	+	+					Endemic
C. conica Boot.			+	+	+	+			+		Endemic. Quelpart I. in Korea
v. *rubens* Kük.				+							Endemic eastward from Kinki
C. conicoides Honda						+					Endemic
C. cruciata Wahlenberg						+	?	+			From Madagascar, India to South China. Southward from Yaku I.
v. *rubrobrunnea* Ohwi								+			Endemic
C. cryptostachys Brougniart								+			South China, Malay and Java.
C. cuneata Ohwi				+							Endemic in Northern Honshū
C. curvicollis Fr. et Sav.			+	+	+	+					Endemic
C. cyperoides Murray			+	+							Dottedly in Eurasia
C. daibuensis Hayata								+			Endemic
C. daisenensis Nakai				+		+					Endemic, in Kinki and Chūgoku in Honshū
C. diandra Schrank	+	+	+	+							Cold regions of Eurasia and North America. Shikotan I. in the Kuriles, Chūbu in Honshū
C. Dickinsii Fr. et Sav.			+	+	+	+					Endemic
C. dimorpholepis Steudel			+	+	+	+	+		+		From India, South China to Manchuria
C. discoidea Boot.				+		+	+				Endemic in Chūgoku in Honshū, Yaku I. and Okinawa I.

Species \ Localities	Southern Sagbalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. dispalata Boot.	+	+	+	+	+	+			+		Manchuria, Eastern Siberia. From Shikotan I. to Yaku I.
v. *Takeuchii* Ohwi				+							Endemic in Western Honshū
C. disperma Dewey	+		+						+		Circumpolar
C. dissitiflora Franch.		+	+	+	+	+					Endemic northward to Shikotan I. in the Kuriles
C. dissitispicula Ohwi									+		Endemic in Southern Korea
C. distichoidea Léveillé et Vaniot				+							Endemic in Kantō
C. Doenitzii Boeckeler				+							Endemic eastward from Kinki
v. *mollis* Akiy.			+								Endemic
C. dolichostachya Hayata							+	+			Endemic
C. Dominii Lév. et Van.	+	+									Kamtchatka. Northern Kuriles
C. Doniana Sprengel			+	+	+	+	+	+	+		India and South China
C. drymophila Turczaninow									+		Manchuria, Eastern Siberia and Kamtchatka
v. *akanensis* Kük.	+		+						+		Manchuria, Eastern Siberia and Kamtchatka. Northern Korea
C. duriuscula C. A. Meyer									+		From Central to Eastern Asia. Northern Korea
C. Duthiei C. B. Cl.								+			Himalaya
C. Duvaliana Fr. et Sav.				+	+	+					Endemic westward from Kantō
C. eleusinoides Turczaninow		+	+								Eastern Siberia and Kamtchatka. The Northern Kuriles and Mt. Taisetsu in Hokkaidō
C. erythrobasis Lév. et Van.									+		Endemic in Northern Korea and Quelpart I.
C. fallax Steud. v. *Franchetiana* Ohwi				+		+					Endemic westward from Chūgoku in Honshū
C. Fernaldiana Lév et Van.				+	+	+			+		Endemic westward from Kantō to Southern Korea
C fibrillosa Fr. et Sav.				+	+	+	+	+	+		Endemic. Loc. of Korea in southern distr.
C. filicina Nees.								+			From India, South China to the Philippines
C. filipes Fr. et Sav.				+	+						Endemic
v. *Arakiana* Ohwi				+							Endemic westward from Kinki
v. *oligostachya* Kük.									+		Manchuria and Ussuri
v. *Rougyana* Kük.				+							Endemic westward from Kantō

Species \ Localities	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
v. *tremula* Ohwi						+					Endemic
C. flabellata Lév. et Van.			+	+							Endemic
C. flavocuspis Fr. et Sav.				+							Endemic north-eastward from Chūbu
v. *platycarpa* Akiy.			+	+							Endemic northward from Tōhoku in Honshū
v. *breviaristata* Akiy.		+	+								Endemic
C. foliosissima Fr. Schm.	+		+	+							Endemic eastward from Kinki
v. *latissima* Akiy.				+		+					Endemic westward from Kinki
C. forficula Fr. et Sav.			+	+	+	+			+		From Ussuri to North China
v. *angustiflora* Akiy. et Suto				+							Endemic in Kantō
v. *scabrida* Kük.						+			+		Endemic in Tushima I. in Kyushū and Korea
C. formosensis Lév. et Van.				+		+		+	+		Endemic in Northern Formosa, Southern Korea and Kantō in Honshū etc.
C. fuirenoides Gaudichaud										+	Oriental South Sea Is.
C. fulta Franch.				+							Endemic
C. fulvorubescens Hayata								+			Endemic
C. genkaiensis Ohwi						+			+		Endemic in Southern Korea, Tushima I. and Northern Kyushū
C. gentilis Franch.							+	+			South China
C. gibba Wahlenberg				+	+	+					Manchuria
C. gifuensis Franch.				+							Endemic from Kantō to Kinki
v. *koreana* Nakai									+		Endemic in Southern Korea
f. *argyrostachys* Kük.				+							Endemic in Kantō
C. glabrescens Ohwi									+		Manchuria
C. glabrior Akiy.				+							Endemic in Kinki
C. glaucaeformis Meinsh.									+		Manchuria. Northern Korea
C. globularis L.	+								+		Northern Eurasia. Northern Korea
C. Gmelini Hook. et Arn.	+	+	+						+		From Eastern Siberia, Kamtchatka, Alaska to Western North America. Korea in northern distr.
C. Gotoi Ohwi									+		Manchuria. Northern Korea

Localities / Species	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. gracilispica Hayata								+			Endemic
C. grallatoria Maxim.				+	+	+					Endemic
v. *heteroclita* Kük.				+	+	+		+			Endemic
C. gynocrates Wormskj.	+	+	+	+							From Eastern Siberia, Kamtchatka, Alaska to Western North America.
C. hachijoensis Akiy.				+							Endemic in Hachijō I.
C. hakkodensis Franch.		+	+	+							Kamtchatka. Northwards from Chūbu in Honshū
C. hakonensis Fr. et Sav.			+	+	+	+			+		Endemic
v. *macrocarpa* Akiy.				+							Endemic in Chūbu
C. Hancockiana Max.									+		North China and Eastern Siberia. Northern Korea
C. Hashimotoi Ohwi				+							Endemic from Chūbu to Kinki
C. Hattoriana Nakai										+	Endemic in Bonin Is.
C. Hatusimana Ohwi								+			Endemic
C. hebecarpa C. A. Meyer								+			India and Central China
C. heterolepis Bunge			+	+	+				+		North China and Manchuria
C. heterostachya Bunge									+		North China and Manchuria
C. Hindsii C. B. Cl.		+									From Aleutians, Alaska to northwestern North America. The Northern Kuriles
C. hirtifructus Kük.				+		+					Endemic
C. holotricha Ohwi									+		Endemic
C. hondoensis Ohwi				+							Endemic in central parts of Honshū
C. hoozanensis Hayata								+			Endemic
C. hotaizanensis Akiy.									+		Endemic
C. Humbertiana Ohwi									+		Endemic
C. humilis Leysser v. *nana* Ohwi		+	+	+	+	+			+		Manchuria and Ussuri
v. *callitrichos* Ohwi		+	+	+	+	+			+		Manchuria and Ussuri. Southward from Shikotan I.
C. hymenodon Ohwi				+							Endemic in Kantō
C. Idzuroei Fr. et Sav.				+	+	+					Central China. Westwards from Kantō

Species \ Localities	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. incisa Boot.			+	+					+		Endemic. Quelpart I. in Korea
C. inflata Hudson	+								+		Cold regions of the northern hemisphere. Northern Korea
v. *borealis* (Hartm.)		+							+		Cold regions of Eurasia. Northern Korea
C. insaniae Koidzumi		+	+	+							Endemic from Kunashiri I. to Chūbu in Honshū
f. *angustifolia* Akiy.				+							Endemic in Northern and Central Honshū
v. *papillaticulmis* Ohwi				+	+						Endemic westward from Prov. Izu
C. ischnostachya Steud.			+	+	+	+	+		+		Endemic from south-western parts of Hokkaidō to Okinawa I. in the Loochoos
C. jacens C. B. Cl.			+	+							Endemic
v. *pubescens* Akiy.				+							Endemic in Tōhoku
C. jaluensis Komarov									+		From North China to Ussuri
C. Jankowskii Gorodokov									+		Eastern Siberia
C. japonica Thunberg			+	+	+	+			+		Manchuria and China
C. japonicaeformis Nakai				+							Endemic in Chūbu
C. Kabanovii Kreczetowicz			+								Northern Saghalien
C. Kanehirai Ohwi										+	Endemic in Palao I.
C. karashidaniensis Akiy.				+							Endemic in Kinki
C. kattaeana Kük.				+							Endemic in Tōhoku
C. Kawakamii Hayata								+			Endemic
C. ketonensis Akiy.	+										Endemic
C. kiotensis Fr. et Sav.			?	+	+	+					Endemic
C. kirganica Komar.	+								+		Kamtchatka. Northern Korea
C. Kobomugi Ohwi			+	+	+	+		+	+		From north-western North America, Ussuri to North China
f. *longibracteata* Ohwi					+				+		Endemic
C. kujuzana Ohwi						+			+		Endemic in Southern Korea and Kyushū
C. kurilensis Ohwi		+									Endemic in Shikotan I.
C. laevissima Nakai				+					+		Endemic westward from Kinki

Localities / Species	Southern Sagalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. lanceolata Boot.			+	+	+	+			+		From Eastern Siberia to North China
v. *laxa* Ohwi	+										Endemic
C. lasiocarpa Ehrhart v. *occultans* Kük.	+		+	+							Endemic northward from Chūbu in Honshū
v. *fuscata* Ohwi									+		Endemic in Northern Korea
C. lasiolepis Franch.			+	+							Endemic northward from Chūbu in Honshū
C. laticeps C. B. Cl.				+					+		Central and South China. Southern Korea and Chūgoku in Honshū
C. latisquamea Komar.			+	+		+			+		Mongolia and Manchuria
C. laxa Wahl.		+	+	+							Northern Eurasia. Southern and Northern Is. in the Kuriles and Northern Honshū
C. Lehmanni Drejer				+					+		Himalaya to South China. Northern Korea and Chūbu in Honshū
C. leiorhyncha C.A.Mey.									+		Eastern Siberia and Manchuria
C. leucochlora Bunge			+	+	+	+	+	+	+		From Eastern Siberia to China
v. *lonchophora* Akiy.				+							Endemic
C. ligulata Nees				+	+	+		+			India, Himalaya and South China. Westward from Chūbu in Honshū
v. *austrokoreensis* Ohwi									+		Endemic in Southern Korea
C. limosa L.	+	+	+	+					+		Cold regions of northern hemisphere. Northern Korea and northward from Kinki in Honshū
C. lithophila Turcz.									+		Eastern Siberia and Manchuria
C. livida Willdenow		+	+						+		Cold regions of Europe and North America. Northern Korea
C. loliacea L.	+		+	+					+		Northern Eurasia. Northern Korea and northward from Prov. Shimotsuke in Honshū
C. longerostrata C. A. Mey.		+	+	+					+		Eastern Siberia. Northward from Chūbu in Honshū
v. *pallida* Ohwi			+	+		+			+		Manchuria
C. longistipes Hayata									+		Endemic
C. luchuensis Ohwi							+	+			Endemic southward from Okinawa I.
C. Lyngbyei Horneman	+	+	+	+					+		Arctic circumpolar. Northern Korea and northwards from Tōhoku in Honshū
C. Maackii Maxim.			+	+		+			+		Eastern Siberia and Manchuria
C. Mackenziei V. Krecz.	+		+								Northern regions of Europe and North America, and Kamtchatka

Species \ Localities	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. macrandrolepis Lév.				+		+		+	+		Endemic westward from Chūbu in Honshū, Quelpart I. of Korea
C. macrocephala Willd.	+	+	+								From Ussuri, Kamtchatka, Alaska to north-western North America. Southward from Urup I. in the Kuriles
f. *bracteata* Kük.	+	+									Alaska
C. macroglossa Fr. et Sav.			+	+		+			+		Endemic. Southern Korea
C. maculata Boot.				+	+	+	+	+			Ceylon
f. *viridans* Kük.				+							Endemic
C. Makinoensis Franch.					+	+					Endemic
C. mandshurica Meinsh.									+		Ussuri. Northern Korea
C. Matsumurae Franch.				+	+	+			+		Endemic westward from Chūbu in Honshū to Quelpart I. of Korea
C. Maximowiczii Miquel		+	+	+	+	+	+		+		Endemic from Kunashiri I. to Okinawa I.
v. *levisaccus* Ohwi				+							Endemic in Central and Southern Honshū
v. *minor* Akiy.				+							Endemic in Kantō
v. *suifunensis* Nakai									+		Manchuria and Ussuri
C. Mayebarana Ohwi					+	+					Endemic
C. melanocarpa Champion	+		+								Eastern Siberia
C. meridiana Akiy.				+							Endemic in Oshima I. of Izu
C. Mertensii Prescott v. *urostachys* Kük.		+	+	+							Endemic from Kunashiri I. in the Kuriles to Central Honshū
C. metallica Lév.					+	+	+	+	+		Endemic. Quelpart I. of Korea
C. Meyeriana Kunth				+		+			+		Eastern Siberia and Manchuria
C. Michauxiana Boeckeler v. *asiatica* Ohwi		+	+	+							From Ussuri to Kamtchatka. Northward from Chūbu in Honshū
C. micrantha Kük.									+		Manchuria
C. micropoda C. A. Mey.	+	+							+		Kamtchatka, Aleutians and Alaska. The Northern Kuriles
C. Middendorffii Fr. Schm.	+	+	+	+							From Ussuri to Kamtchatka. Northward from Chūbu in Honshū
v. *kirigaminensis* Ohwi	+	+	+	+							Endemic
C. minuta Franch.	+		+								Endemic

Species \ Localities	Southern Sachalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
f. *elongata* (Ohwi)	+										Endemic
f. *longisquama* Akiy.			+								Endemic
C. mira Kük.				+					+		Endemic westwards from Kinki
C. misandra R. Brown		+									Arctic circumpolar
C. mitrata Franch.				+	+	+			+		Endemic westward from Kantō to Southern Korea
v. *aristata* Ohwi				+		+			+		Endemic westwards from Chūbu in Honshū
C. mokkwaensis Akiy.								+			Endemic
C. mollicula Boot.	+	+	+	+	+	+		+	+		Central China. Southward from Etorofu I.
C. mollissima Christ	+								+		Eastern Siberia. Northern Korea
C. Morii Hayata								+			Endemic
C. morrisonicola Hayata								+			Endemic
C. Morrowii Boot.				+	+	+					Endemic
v. *laxa* Ohwi						+					Endemic in Yaku I.
C. multifolia Ohwi			+	+	+	+					Endemic
v. *glaberrima* Ohwi				+							Endemic in Kinki
f. *globosa* Akiy.				+							Endemic
v. *imbecillis* Ohwi						+					Endemic
v. *pallidisquama* Ohwi				+	+						Endemic westwards from Kinki
C. muricata L.		+	+						+		Cold regions of the north hemisphere. Northern Korea and Southern and Northern Kuriles
C. Myabei Franch.			+	+		+					Endemic
C. nachiana Ohwi				+							Endemic in Prov. Kii
C. nagatadakensis Masamune						+					Endemic in Yaku I.
C. Nakiri Ohwi				+	+	+					Endemic
C. nemostachys Steud.				+	+	+	+				India, Himalaya, Central and South China. Westward from Kinki to the Loochoos
C. nemurensis Franch.	+	+	+	+							Southern and Northern Kuriles and northward from Chūbu in Honshū
C. neofilipes Nakai									+		Endemic

Species \ Localities	Southern Sagbalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. nervata Fr. et Sav.			+	+	+	+			+		Manchuria and Ussuri
C. nesophila Holm.		+									North-western North America and Kamtchatka. The Northern Kuriles
C. neurocarpa Max.				+					+		North China, Manchuria and Eastern Siberia
C. nipposinica Ohwi			+	+	+	+	+	+	+		Endemic
C. norvegica Retzius									+		Eurasia and North America
C. ochrochlamys Ohwi									+		Endemic in Northern Korea
C. odontostoma Kük.						+		+			Endemic
C. Oederi Retz. v. *viridula* Kük.	+	+	+	+							Kamtchatka, Northern North America and Greenland. Northward from Chūbu in Honshū
C. Oederoides Tatewaki et Akiy.			+								Endemic in Okushiri I.
C. Ogawai Akiy.				+							Endemic in Kinki
C. Ohwii Masamune						+					Endemic in Yaku I.
C. Okamotoi Ohwi									+		Endemic in Southern Korea
C. Okuboi Franch.				+							Endemic in the Izu Is.
C. okushirensis Akiy.			+								Endemic in Okushiri I.
C. omiana Fr. et Sav.		+	+	+		+					Endemic southward from Kunashiri I. in the Kuriles
v. *monticola* Ohwi			+	+							Endemic northwards from Chūbu in Honshū
C. Onoei Fr. et Sav.			+	+					+		Manchuria and Eastern Siberia
C. orthostemon Hayata								+			Endemic
C. oshimensis Nakai				+							Endemic in the Izu Is. and ?Awa
C. otaruensis Franch.			+	+	+	+					Endemic
C. Otayai Ohwi				+							Endemic in Yetchū
C. oxyandra Kudo	+	+	+	+	+	+		+			Endemic from the Middle Kuriles to Yaku I., and Formosa
v. *lanceata* Ohwi				+							Endemic
C. pachygyna Fr. et Sav.				+	+						Endemic westwards from Kinki in Honshū
C. pachystachya Chamisso		+									The Aleutians and Western North America. The Northern Kuriles
C. pallida C. A. Mey.	+	+	+						+		Manchuria and Eastern Siberia. Shikotan I. in the Kuriles

Species \ Localities	Southern Saghalien	Kuriles	Hokkaikō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. papulosa Boot.			+	+		+			+		Endemic
C. parciflora Boot.	+	+	+	+							Northern Saghalien. Southward from Kunashiri I. in the Kuriles to Chūbu in Honshū
C. pauciflora Lightfoot	+	+	+	+					+		Arctic circumpolar. Northwards from Chūbu in Honshū
C. paupercula Michaux		+		+							Arctic circumpolar. Central and North Honshū and the Northern Kuriles
C. Paxii Kük.						+			+		China. Southern Korea and Chūgoku in Honshū
C. pediformis C. A. Meyer									+		Manchuria and Eastern Siberia
v. *genuina* Max.									+		Manchuria and Eastern Siberia
C. peiktusani Komar.									+		Manchuria and Ussuri
C. phacota Sprengel			+	+	+	+		+	+		From India, Himalaya to South China. Quelpart I. of Korea
v. *gracilispica* Kük.			+	+	+	+		+	+		From India, Himalaya to South China. Central and Southern parts of Korea
C. phaeopoda Ohwi								+			Endemic
C. phaeothrix Ohwi									+		Endemic in Northern Korea
C. physocarpa Presl		+									The Aleutians, north-western North America. The Northern Kuriles
C. pilosa Scopoli v. *auriculata* Kük.	+		+	+					+		Manchuria and Ussuri. Northwards from Northern Honshū
C. pineticola Ohwi				+							Endemic in Kantō
C. pisiformis Boot.				+							Endemic in Chūbu and Kantō
C. planata Fr. et Sav.			+	+							Endemic northward from Chūbu in Honshū
v. *angustealata* Akiy.				+							Endemic westward from Kinki
v. *remotiuscula* Akiy.				+		+					Endemic
C. planiculmis Komar.	+		+	+					+		Manchuria, Ussuri, Kamtchatka and Eastern Siberia
C. pocilliformis Boot.				+	+	+	+	+	+		? South China. Southern Korea and southward from Chūbu in Honshū
C. poculisquama Kük.				+					+		Central China. Southern Korea and Chūgoku in Honshū
C. podogyna Fr. et Sav.			+	+							Endemic
f. *aristodentata* Kük.			+	+							Endemic
C. polyschoena Lév. et Van.						+			+		Endemic in Tushima I. in Kyushū and Korea

Localities / Species	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. pseudoaphanolepis Ohwi				+							Endemic in Kantō
C. pseudoarenicola Hayata								+			Endemic
C. pseudochinensis Lév. et Van.									+		Endemic
C. pseudocuraica Fr. Schm.	+	+	+	+					+		Eastern Siberia. Northern Korea, from Northern Honshū to Saghalien and Kunashiri I. and Shikotan I. in the Kuriles
C. pseudo-Cyperus L.			+	+							Eurasia, Northern Africa, North America and Newzealand. Central Honshū and Eastern Hokkaidō
C. pseudo-Doenitzii Akiy.				+							Endemic in Chūbu
C. pseudololiacea Fr. Schm.	+	+	+								Endemic
C. pseudosadoensis Akiy.				+							Endemic in Tōhoku
C. pseudostrigosa Lév. et Van.				+	+	+		+			Endemic
v. *arimensis* (Ohwi)				+							Endemic in Kinki
v. *aureobrunnea* (Ohwi)				+	+	+					Endemic
v. *elongatula* (Ohwi)						+					Endemic
v. *fulva* (Ohwi)				+							Endemic northward from Chūbu
C. pseudo-Thunbergii Akiy.				+							Endemic in Tōhoku
C. puberula Boot.	+		+	+							Manchuria. Northward from Chūbu in Honshū
v. *gracillima* Akiy.				+							Endemic in Kinki
C. pudica Honda				+							Endemic
C. pumila Thunb.	+	+	+	+	+	+	+	+	+		From Ussuri to South China, Australia, Newzealand and South America
C. purpureotincta Ohwi								+			Endemic
C. pyrenaica Wahl.		+	+	+							Arctic circumpolar. Northward from Chūbu in Honshū
v. *altior* Kük.			+	+							? Endemic
C. quadriflora Smith			+						+		From Manchuria to Ussuri
C. Raddei Kük.									+		Manchuria, Ussuri and Eastern Siberia
C. rariflora Smith	+	+									Arctic circumpolar. Northwards from the Middle to the Northern Kuriles
C. Reinii Fr. et Sav.				+	+	+					Endemic

Species \ Localities	Southern Sagbalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. remotiflora HAYATA								+			Endemic
C. remotispicula HAYATA								+			Endemic
C. remotiuscula WAHL.	+		+	+					+		From Himalaya, China to Eastern Siberia. Northwards from Chūbu in Honshū
C. rhizopoda MAX.		?	+	+	+	+					Endemic
C. rhynchophysa WAHL.	+	+	+	+					+		Manchuria, Ussuri, Kamtchatka and northern districts of Eurasia. Northwards from Chūbu in Honshū and Northern Korea
C. rikuchiuensis AKIY.				+							Endemic in Tōhoku
C. Rochebruni FR. et SAV.				+	+						Central China
C. rotundata WAHL.	+	+							+		Arctic circumpolar. Northern Korea and the Northern Kuriles
C. rugata OHWI			+	+		+					Endemic
C. rugulosa KÜK.			+	+							Manchuria and Ussuri
C. rupestris BELLARDI	+								+		Northern Eurasia. Northern Korea
C. sabynensis LESSING	+	+	+	+					+		From Manchuria to Eastern Siberia. Korea, Northern Honshū and Shikotan I. in the Kuriles
v. *rostrata* OHWI				+							Endemic northward from Chūbu to Tōhoku
v. *leiosperma* OHWI									+		Endemic in Southern Korea
C. sachalinensis FR. SCHM.	+	+	+	+							Endemic northward from Chūbu in Honshū to the Middle Kuriles
v. *iwakiana* OHWI				+							Endemic in Chūbu
v. *longiuscula* OHWI				+							Endemic in Chūbu
C. sacrosancta HONDA				+	+	+					Endemic southward from Southwestern Honshū
C. sadoensis FRANCH.	+		+	+							Endemic
C. Sakaguchii OHWI				+							Endemic in Kinki
C. salina WAHL.	+		+								Kamtchatka and Northern Europe. Nemuro in Hokkaidō
C. satsumensis FR. et SAV.				+	+	+		+			Endemic westward from Kansai in Honshū
C. saxatilis L. v. *laxa* OHWI		+									Eastern Siberia. The Northern Kuriles
C. scabriculmis OHWI				+	+	+			+		Endemic westward from Kinki in Honshū to Yaku I. and Quelpart I.
C. scabrifolia STEUD.			+	+	+	+	+	+	+		Maritime prov. from Siberia to China

Species \ Localities	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. scabrinervia Fr. et Sav.	+	+	+								Endemic
C. Schmidtii Meinsh.	+		+						+		Eastern Siberia to Kamtchatka, Northern Korea and Eastern Hokkaidō
C. scita Max.				+							Endemic in Chūbu and Kantō
v. *riishirensis* Kük.	+	+	+								Endemic. Southward from Urup I. in the Kuriles
v. *koraginensis* Kük.		+									Kamtchatka. The Northern Kuriles
v. *obtusisquama* Ohwi		+									Endemic in the Northern Kuriles
C. scitaeformis Kük.				+							Endemic
C. Sedakovii C. A. Mey.		+							+		Manchuria and Eastern Siberia. Northern Korea. Paramushir I, and Shikotan I. in the Kuriles
C. senanensis Ohwi				+							Endemic northwards from Chūbu
C. sendaica Franch.				+	+				+		Endemic westward from Tōhoku in Honshū to Quelpart I. of Korea
C. shakushizawaensis Akiy.				+							Endemic in Chūbu
C. sharensis Franch.			+								Endemic
v. *musashiensis* Ohwi				+							Endemic in Kantō
C. Shimadai Hayata						+	+	+			Endemic southward from Yaku I,
C. shimidzensis Franch.		+	+	+					+		Central and Northern Honshū, and Utsuryōtō I. of Korea
C. shinanoana Nakai				+							Endemic in Chūbu
C. siderosticta Hance			+	+	+	+			+		Manchuria and North China
v. *glabra* Ohwi				+							Endemic in Kinki
v. *ornata* Honda				+							Endemic
v. *variegata* Akiy.				+							Endemic
C. sikokiana Fr. et Sav.				+	+	+					Endemic westwards from Kinki in Honshū
C. siroumensis Koidz.				+							Endemic in Chūbu
C. sisukensis Akiy.	+										Endemic
C. sociata Boot.					+	+	+	+			Endemic
C. soriofkensis Lév. et Van.	+										? Ussuri
C. stenantha Fr. et Sav.				+							Endemic north-eastward from Chūbu to Tōhoku

Species \ Localities	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
v. *taisetsuensis* Akiy.	+	+	+								Kamtchatka
C. stenostachys Fr. et Sav.				+							Endemic westwards from Chūbu
C. stipata Mühlenberg			+	+							? Ussuri and North America. Northward from Chūbu in Honshū
C. subcernua Ohwi						+					Endemic
C. subdita Ohwi				+	+						Endemic westward from Chūbu
v. *kiyozumiensis* Akiy.				+							Endemic in Kantō
C. subspathacea Worsmk.	+	+									Arctic circumpolar. Shikotan I. in the Kuriles
C. subteiogyna Ohwi								+			Endemic
C. subumbellata Meinsh.	+		+								Endemic
C. taiheiensis Hayata								+			Endemic
C. taihokuensis Hayata								+			Endemic
C. taiwanensis Akiy.								+			Endemic
C. takasagoana Akiy.								+			Endemic
C. Tashiroana Ohwi				+							Endemic in Chūgoku
C. tatsutakensis Hayata								+			Endemic
C. tegulata Lév. et Van.	+		?								Endemic
C. temnolepis Franch.				+							Endemic
C. tenuiflora Wahl.	+	+	+	+							Endemic. Quelpart I. of Korea and northward from Okinawa I. in the Loochoos
v. *arrhyncha* Kük.			+								Endemic
C. tenuiformis Lév et Van.	+	+	+	+							Eastern Siberia and Manchuria. Northern Korea, northward from Chūbu in Honshū to Shikotan I. in the Kuriles
f. *puberula* Akiy.		+									Endemic in Shikotan I.
C. tenuinervis Ohwi						+					Endemic
C. tenuiseta Franch.				+							Endemic in Central and Northern Honshū
C. Thunbergii Steud.	+	+	+	+	+	+					Endemic northward from Chūbu in Honshū to Shikotan I. in the Kuriles and Saghalien
v. *appendiculata* Ohwi		+	+						+		Eastern Siberia. Northern Korea and the Southern and the Northern Kuriles

Localities / Species	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
v. *pallidisquama* Akiy.				+							Endemic in Central Honshū
C. tosaensis Akiy.					+						Endemic
C. Toyoshimae Tuyama										+	Endemic in the Bonins
C. traiziscana Fr. Schm.	+		+								Endemic
C. transversa Boot.				+	+	+	+		+		Endemic eastward from Quelpart I. and northward from Okinawa I.
C. trichosperma Ohwi								+			Endemic
C. tristachya Thunb.				+	+	+			+		Endemic westward from Kansai in Honshū to Southern Korea
C. tsuishikarensis Koidz. et Ohwi		+	+	+							Endemic northward from Chūbu in Honshū to Kunashiri I. in the Kuriles
C. tsushimensis Ohwi						+					Endemic in Tushima I.
C. tumidula Ohwi					+						Endemic
C. tuminensis Kom.	+								+		Ussuri and Kamtchatka. Northern Korea
C. uda Max.	+		+	+					+		Manchuria and Ussuri. Northward from Chūbn in Honshū, and Northern Korea
C. ulobasis V. Krecz.									+		Manchuria and Eastern Siberia. Northern Korea
C. urelytra Ohwi								+			Endemic
C. ushishirensis Ohwi		+									Endemic in Ushishir I. and Rashuwa I.
C. ussuriensis Kom.									+		Manchuria and Eastern Siberia
C. uzenensis Koidzum.				+							Endemic in Tōhoku
C. vaginata Tausch.		+	+	+					+		Northern Eurasia. Northward from Tōhoku in Honshū, and Northern Korea
v. *Petersii* Akiy.	+	+	+								Endemic. The Southern Is. in the Kuriles
C. Vanheurckii Müll.	+	+	+	+							Eastern Siberia. Northward from Chūbu in Honshū
C. Vanioti Lév.				+							Endemic northward from Chūbu
C. verna Chaix. v. *microtricha* Ohwi	+	+	+	+							Eastern Siberia and Kamtchatka. Northward from Chūbu in Honshū to the Northern Kuriles
C. vesicaria L.	+	+	+	+		+			+		Eurasia and North-eastern North America
v. *dichroa* Andersson		+									" " " " "
v. *tenuistachya* Kük.		+	+?	+?							" " " . Shikotan I. in the Kuriles

Species \ Localities	Southern Saghalien	Kuriles	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	other distr.	Regions other than those mentioned in the left-side columns, and remarks
C. viridissima NAKAI	·	·	·						+		Endemic in Utsuryōtō I.
C. Warburgiana KÜK.	·	·	·					+			Endemic
C. xyphium KOMAR.	·	·	·						+		Manchuria and Mongolia. Northern Korea

TABLE III. Common species between the districts and the percentages of the species indigenous to the districts in the top column appearing in the districts in the lateral column

		Saghalien	Kuriles: Northern Is.	Kuriles: Southern Is.	Hokkaidō	Honshū	Shikoku	Kyushū	Loochoos	Formosa	Korea	Bonins
Saghalien		70sp., 7var., 2f.	23sp., 1v. 48%	36, 2, 1 57%	53, 3 40%	38, 2 17%	5sp. 6%	7 7%	1 4%	3 5%	37, 1 26%	0 0%
Kuriles	Northern Is.	23, 1 30%	43, 8	26, 4 44%	28, 3 22%	23, 1 10%	1 1%	2 2%	0 0%	1 2%	17, 3 14%	0 0%
	Southern Is.	36, 2, 1 49%	26, 4 60%	56, 10, 2	51, 5 40%	44, 3 20%	8, 1 11%	11, 1 11%	2 8%	3 5%	28, 3 21%	0 0%
Hokkaidō		53, 3 71%	28, 3 62%	51, 5 82%	123, 6, 2	96, 9, 1 45%	32, 2 42%	42, 3 42%	8 31%	9, 1 15%	61, 5 45%	0 0%
Honshū		38, 2 50%	23, 1 48%	44, 3 69%	96, 9, 1 76%	191,42,5	65, 6 88%	79, 8 80%	17 65%	19, 3 33%	76, 4 54%	1 25%
Shikoku		5 6%	1 2%	8, 1 13%	32, 2 25%	65, 6 30%	75,6,1	64, 4 63%	18 69%	19, 2 31%	35, 2, 1 26%	1 25%
Kyushū		7 9%	2 4%	11, 1 18%	42, 3 32%	79, 8 37%	64, 4 84%	94,14	21 81%	25, 3 42%	48, 5 36%	1 25%
Loochoos		1 1%	0 0%	2 3%	8 6%	17 7%	18 22%	21 19%	26	18 27%	13 9%	1 25%
Formosa		3 4%	1 2%	3 4%	9, 1 7%	19, 3 9%	19, 2 26%	25, 3 26%	18 69%	63, 4	14, 1 10%	1 25%
Korea		37, 1 48%	17, 3 40%	28, 3 46%	61, 5 47%	76, 4 34%	35,2,1 47%	48, 5 49%	13 50%	14, 1 22%	132,15,1	1 25%
Bonins		0 0%	0 0%	0 0%	0 0%	1 0%	1 1%	1 1%	1 4%	1 2%	1 1%	4

4. Some remarks on the states of the distributions inside or just outside this Region

a. Connections to the outer regions through the Kuriles and Saghalien

As shown above, those coming from the outer regions through the Kuriles and attaining to Hokkaidō or more southern districts are 26 spp. and 3 varr., of which 12 spp. also enter this Region passing through the Mamiya Strait. All species passing through the Mamiya Strait are 49 spp. and 4 varr., of which 7 spp. are found in the North Kuriles (Is. Shumushu, Is. Paramushir and adjoining small islands) and not in the southern islands (cf. **II. 2** B, C).

These facts show us that there exists a much better connecting route from the outer regions by the Mamiya Strait than through the Kuriles (cf. **II. 6**).

b. Aspects of the distributions in the Kuriles

Those coming from the outer regions up to the North Kuriles amounts to 13 spp. and 1 var., and those up to Is. Urup are only 2 spp., which fact shows us there exists a boundary line between the North Kuriles and the southern islands. Those growing in Hokkaidō (or more southern districts) and ending their distributions in Is. Shikotan are 17 spp. and 1 var., and those ending in Is. Kunashiri 11 spp. and 1 var., but only 7 spp. proceed further north (in Is. Etorofu 2 spp. ending, in Is. Urup 4 spp. and in Is. Shimshir 1 sp.).

The facts shown above urge the writer to divide the Kuriles in three districts from the phytogeographical point of view.

c. Relations between Saghalien and the south-eastern part of Hokkaidō and Is. Shikotan

Certain species, such as *Carex Mackenziei*, *C. salina*, *C. subspathacea* and *C. Schmidtii* have their localities in Saghalien and in Nemuro and/or Kushiro in Hokkaidō and/or on Is. Shikotan, and are not found in the intervening districts; and there are many other species similar to these with respect to forms of distribution between Saghalien and Hokkaidō, for example *C. gynocrates* or *C. diandra* (cf. **II. 5, 6**).

d. Aspects of connections between Hokkaidō and Honshu

Carices of 13 spp., growing in northern districts, come southwards and end their distributions in Hokkaidō, and 26 spp. come northwards and end in Honshu. Some of the common species between Honshū and

Hokkaidō, about 38 spp., 3 varr. and 1 f., lack their localities in Oshima in the western parts of Hokkaidō, but are found in Iburi, Hidaka, Ishikari or Kushiro, or from central to eastern parts of Hokkaidō, and other common species, about 58 spp. and 6 varr., are distributed widely in Hokkaidō (cf. **II. 5, 6**).

e. Is. Quelpart

The island lies quite close by the Korean Peninsula, but as far as the writer's investigations have proved, there are 2 spp. common to Korea and not to Japan (1 sp. of them is distributed to Is. Tushima), while there are 10 spp. common to Japan and not to Korea. It shows us that there exists a close relationship between this island and Japan concerning the distributions of *Carices* as with other Phanerogams (cf. **II. 6**).

f. Distributions in the Loochoos

Is. Okinawa has 7 spp. of the southernmost, and 3 spp. of the northernmost, and Is. Yakushima of Kyushū has 4 spp. of the southernmost, and 2 spp. of the northernmost. So these islands appear to be the points of fusion, but it cannot be said definitely, for there are few high mountains in the Loochoos and *Carices* grow, in those southern districts, plentifully on high mountains.

g. Aspects in the small islands, especially of the endemic species

The Bonin Is. have three endemic species out of their four species, and show the most remarkable example of the endemic species along with other Phanerogams. Izu Shichitō Is. have four endemic species, of which *Carex oshimensis* and *C. Okuboi* are distributed in almost all islands and gives an extraordinarily singular aspects to the islands. Is. Yakushima, Is. Shikotan and many others show peculiar aspects as to the endemic species, but in some islands the species show almost the same aspects as in the near districts (cf. **II. 6**).

5. Modes of the distributions

Carices are perennial by rootstocks. The rootstocks of some species creep long and spread their habitats (for example, those of *C. Kobomugi* are often more than several meters long in their living state).

Fruits of *Carices* are enveloped in perigynia. Fruits themselves sink, but while enveloped in perigynia they float for a long time, at least three months, according to the writer's observations. It is obvious that

Carices are mainly distributed with the aid of floating character of perigynia by means of rainfall, streams and sea currents. The followings may be explained by the floating character of the fruits for distribution: 1. Species found mostly on the seashore or close by them, such as *Carex pumila, C. scabrifolia, C. fibrillosa* and *C. Boottiana* grow on the territories washed by the same sea currents. 2. It may be supposed that the fruits of some Saghalien species were carried by the Saghalien current southward to south-eastern parts of Hokkaidō and/or Is. Shikotan and grew where edaphic and climatic conditions were suitable to them (cf. II. 4 c & 6), or fruits of the species growing in Hokkaidō were carried southward by the Kurile current, or those growing in Honshū were carried northward by the Japan current and grew on the territories excepting the near positions of the Tsugaru Strait where the current run eastward (cf. II. 4 d & 6). 3. The fruits of the species of China Proper were carried by the streams and distributed to southern Korea and Japan (cf. II. 2 F). 4. There are found closely related species i. e. *Carex viridissima, C. Matsumurae* and *C. Augustini*, or *Carex multifolia* and its near allies on the territories washed by the same current respectively (cf. II. 7).

6. Features of the distributions during the geological ages

Carices are judged to have been laxuriant since the Tertiary period, and today's distributions are thought to have been due to the climatic and edaphic conditions since then. The reason why connections are more evident in the Mamiya Strait than through the Kuriles is that presumably Saghalien was once connected to the Continent while the Kuriles were not, or the islands had not yet existed above the sea (cf. II. 4 a). It may be thought that the North Kuriles were once a part of the Continent, and Is. Kunashiri and Is. Shikotan were included in Hokkaidō (cf. II. 4 b). Is. Quelpart seems to have been connected by land to Japan even after the separation of Korea from Japan took place supposing that Korea was once connected to Japan by land (cf. II. 4 e). The Philippines and Formosa may have been isolated for a long time (cf. II. 2 E). Saghalien, Hokkaidō and Honshū are supposed to have been connected with one another in more eastern parts compared with today's land position (this supposition will not exclude the opinion that the distributions were operated by the sea current, cf. II. 4 c, d & 5). These suggestions may finally induce us to reason that Australia once joined this Region (cf. II. 2 G i).

7. Species formations of *Carices*

As shown above (cf. II. 2 G i & 6), Australia and this Region have common species of the elements of warmer districts, i. e. *Carex brunnea* and *C. pumila*, and some of the Australian species are very similar to those of this Region, such as *C. breviculmis* and *C. leucochlora*, *C. Brownii* and *C. nipposinica*, *C. Gaudichaudiana* and *C. Thunbergii* or *C. neurochlamys* and *C. maculata*. Just outside of the localities of *C. multifolia*, there are found the following very near species, *C. dolichostachya* (Formosa), *C. atroviridis* (Is. Yakushima) and *C. hachijoensis* (Is. Hachijō, Izu), and a similar fact is seen in *C. Matsumurae* and its near allies (cf. II. 5).

In view of the preceeding facts and existences of very many endemic species narrowly distributed, especially on the small islands (cf. II. 1 & 4 g), the writer thinks he can advance a theory that in some *Carices* new and viable species are produced in a comparatively short time. Hybridization also seems to take place, for example, *C. okushirensis* is very near both to *C. conica* and *C. foliosissima*, which fact urges the writer to think it a hybrid of the two species.

Summary

1. The present paper deals with the geographical distributions of 347 spp., 76 varr. and 10 forms of *Carices* indigenous to the Far Eastern Region of Asia.
2. Most of *Carices* of this Region are produced commonly in North-East Asia. Connecting routes exist in every Strait and the southern part of the Yellow Sea.
3. Modes of distributions inside the Region are divided in thirty-two types.
4. Many more species connect to the outer regions passing more often through Saghalien than through the Kuriles.
5. The Kurile Is. may be divided in three districts on the phytogeographical point of view.
6. Some Saghalien species are found in the south-eastern part of Hokkaidō and Is. Shikotan, and some common species of Hokkaidō and Honshū lack their localities in western Hokkaidō.
7. *Carices* of Is. Quelpart closely relate to those of Japan and not to those of the Korean Peninsula.
8. Fruits of *Carices* enveloped in perigynia float for a long time, and this character is the most important factor in the process of the dist-

ribution, and the sea currents play a great part for this purpose.

9. Distributions depend on the edaphic and climatic conditions of habitats since the Tertiary period and also on the extent of habitats of each species.

10. Endemic species are 63% of the whole, and many of them grow in Honshū and Formosa, and sometimes present peculiar aspects on the small islands. These facts and the existences of near species in Australia suggest to the writer a belief that *Carices* produce new species in rather a short time. Hybridization also takes place.

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