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## Geographical Distribution Patterns of the Apiaceae in Sakhalin and the Kuril Islands

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**Abstract** Thirty species of the Apiaceae in Sakhalin (S) and the Kuril Islands (K) were examined on 1,592 specimens deposited in the main Japanese herbaria: KYO, SAPS, SAPT, TI and TNS. The geographical distribution of 27 of these 30 species was determined quantitatively. *Ligusticum scoticum* (number of specimens: S+K = 190) and *Tilingia ajanensis* (S+K = 171) represent the two most abundant species of the Apiaceae in these regions. The Sakhalin-Kurils index (S-K index:  $S-K/S+K$ ) of *L. scoticum* showed a somewhat negative numerical value,  $-0.11$ , and that of *T. ajanensis* showed an especially negative value,  $-0.43$ , meaning a clear distribution bias of the latter species toward the Kurils. However, many Apiaceae species are characterized by positive S-K indices, which means generally a distribution bias toward Sakhalin. An extreme high positive S-K index ( $+1.00$ ), which means the presence in Sakhalin but the absence in the Kurils, is found in the following six species: *Angelica edulis* (but only S+K = 1), *A. maximowiczii*, *A. saxatilis*, *A. ursina* (but actually present in Kunashir), *Phlojodicarpus villosus* and *Sphallerocarpus gracilis*. An extreme high negative S-K index ( $-1.00$ ) is found in only one species, *Conioselinum filicinum*.

**Kew words:** Apiaceae, geographical distribution, Kurils, Sakhalin, S-K index

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### Introduction

The distribution patterns of gymnosperms (Takahashi 2004) and Ericaceae (Takahashi 2006) in Sakhalin and the Kuril Islands have been reported previously, and the Sakhalin-Kurils index (S-K index) proved to be a convenient way of showing the quantitative distribution patterns. Following these earlier reports, geographical distribution patterns of the Apiaceae are considered in this study. The plants of Apiaceae grow in a wide variety of habitats: coastal meadows and rocks, wet places along streams and valleys, forests to forest-edges in lowland to mountain regions, and alpine meadows. This family is regarded as one of the important main components of the boreal native flora and vegetation of the regions in question. Determining the extant distribution patterns of the Apiaceae in Sakhalin and the Kurils will contribute to the study on the past changes of flora and vegetation in Northeast Eurasia.

### Materials and Methods

Thirty species of the Apiaceae have been recorded from Sakhalin and the Kurils. Specimens collected

from the regions were examined in the main Japanese herbaria: KYO, SAPS, SAPT, TI and TNS (acronyms following Holmgren et al. 1990, except for SAPT, which means the Herbarium of the Botanic Garden, Hokkaido University). As the presence of three species, *Hydrocotyle ramiflora*, *Seseli condensatum* and *Torilis japonica*, was not ascertained from the regions, the distribution patterns of the remaining 27 species were analyzed quantitatively. Specimens examined are listed in the Appendix. Geographical grids or island numbers used in the Appendix are shown in the maps of Sakhalin (Fig. 1) and the Kurils (Fig. 2).

The number of herbarium specimens excluding duplicate sheets are counted for Sakhalin (S) and the Kurils (K), and also counted for three parts of each region (Table 1). The S-K index is formulated as  $S-K/S+K$ . The numerical value of this index varies between  $-1.0$  and  $+1.0$ ; a higher positive number indicates more abundant distribution in Sakhalin than in the Kurils, and vice versa (Table 2).

Since this study aims mainly to determine quantitatively the geographical distribution patterns of the Apiaceae species in these regions, only representative synonyms and recent literatures are cited in the Results and Discussion.

## Results and Discussion

### *Species distribution patterns* APIACEAE

**1. *Aegopodium alpestre*** Ledeb. Fl. Altaic. **1**: 354 (1829); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 226 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 281 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 126 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Ezo-bōhū.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 11, second from the lower right.

Okhotsk Sea Region: Pimenov (1987) Fig. 76G.

This is a cool-temperate species of perennial herbs with 20–70 cm tall rather slender and mostly glabrous stems, 2 or 3 times ternately pinnate triangular leaves, and without bracts (or rarely few bracts) and bracteoles. The plants grow mostly in mountain forests.

*Aegopodium alpestre* is distributed in Altai, E. Siberia, China, N. Korea, Japan (central Honshu to Hokkaido), Sakhalin and the Kurils (Ohba 1999). It is found mainly in southern and middle Sakhalin and the southern Kurils: Habomais, Shikotan, Kunashir and Iturup (Table 1). It occurs somewhat abundantly in these regions (S+K = 90), and the S-K index (+0.44) means that the distribution is somewhat biased in favor of Sakhalin (Table 2).

**2. *Angelica edulis*** Miyabe [in Trans. Asiat. Soc. Jap. **21**: 205 (1893), nom. nud.] ex Y.Yabe in Journ. Coll. Sci. Imp. Univ. Tokyo **16**(2): 77 (1902); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 256 (1987), author name as “Miyabe in Y.Yabe”; Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 298 (1999).

Japanese name: Ama-nyū.

[Representative distribution maps]

Sakhalin: not listed in Smirnov (2002).

Okhotsk Sea Region: Pimenov (1987) Fig. 83B.

This is a cool-temperate species of large perennial herbs with 1–2 m tall glabrous stems, 1 or 2 times ternately pinnate leaves with relatively thin ovate or elliptic ultimate segments with cordate base. The plants grow in forests and forest-edges of mountains.

*Angelica edulis* is mostly endemic to Japan (central Honshu to Hokkaido) and extends very rarely to the southern part of Sakhalin (Table 1). It has rarely been reported from the southern Kurils (Iturup; Pimenov 1987). However, because this species is somewhat rare in eastern Hokkaido and there are no specimens of the Kurils found in the main Japanese herbaria, the presence in Iturup should be re-examined. Although there have been no records from Sakhalin in Russian literatures (Pimenov 1987, Smirnov 2002), Ohba (1999) recorded its distribution as “Sakhalin (?)”. I could ascertain an old Sakhalin specimen in TI (Toyohara,

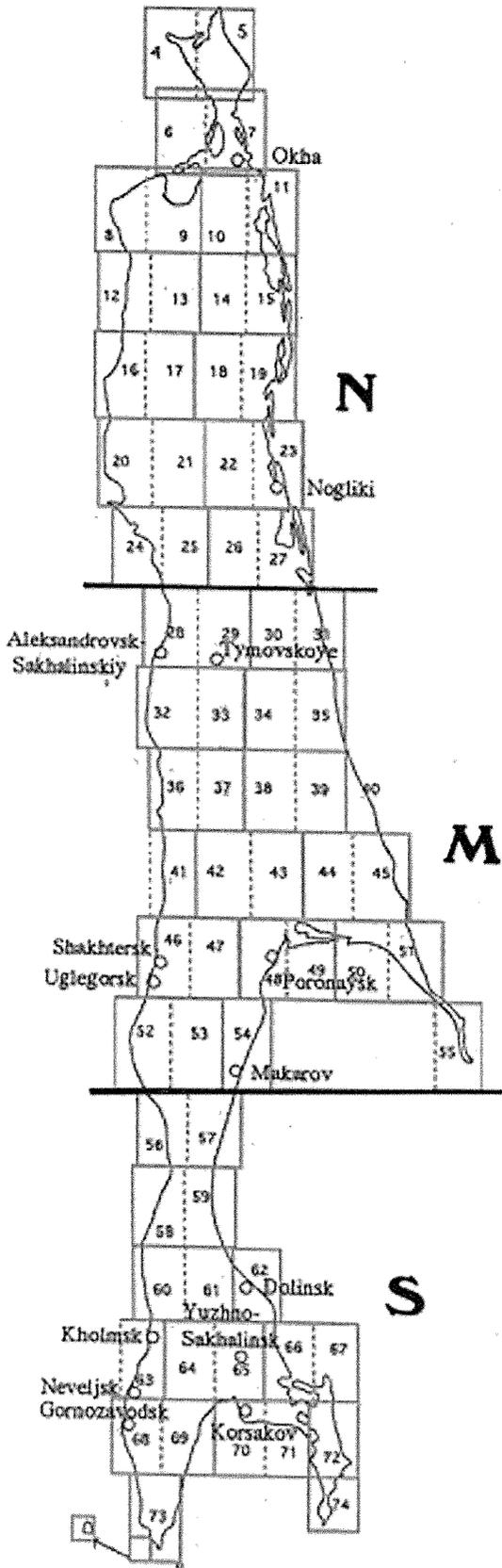


Figure 1.

A map showing the division into the southern (S), middle (M) and northern (N) parts. The grid numbers are equivalent to those in a list of Appendix and the map “Atlas of Sakhalin Region part I Sakhalin (1994)”.

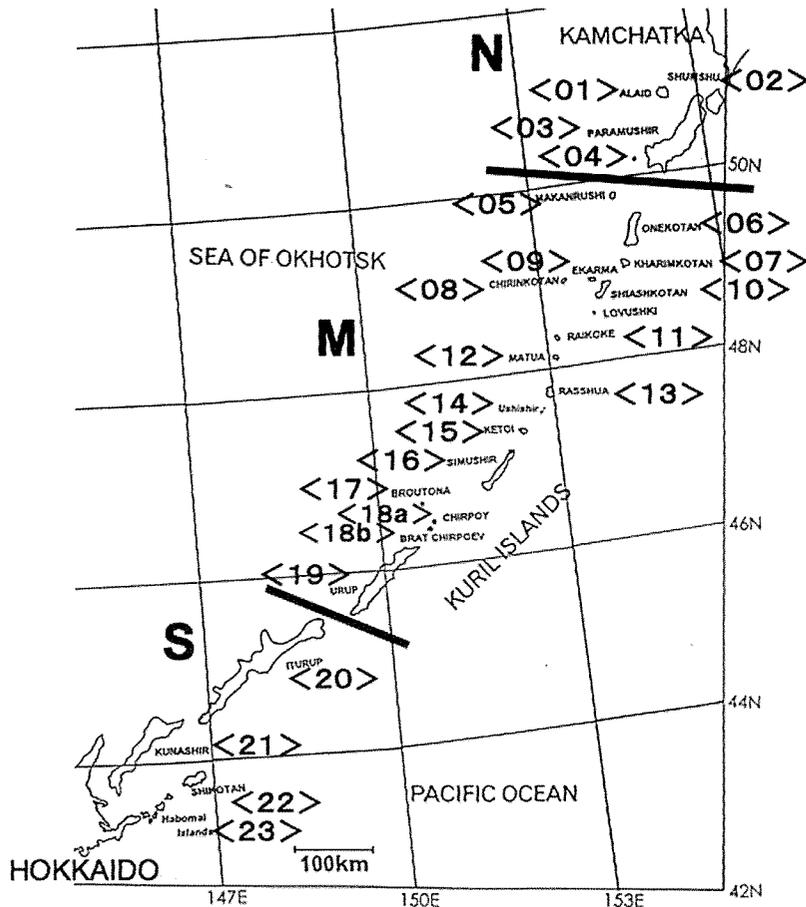


Figure 2.  
A map of the Kuril Islands showing the division into the southern (S), middle (M) and northern (N) parts. The island numbers are equivalent to those in a list of Appendix.

collected by Muramatsu in 1923), and it should occur very rarely in southern Sakhalin (only S+K = 1, Table 1).

**3. *Angelica genuflexa*** Nutt. ex Torr. et A.Gray, Fl. N. Amer. **1**: 620 (1840); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 252 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 297 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 127 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Ōba-senkyū, Ezo-ōba-senkyū.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 11, the lower right.

Okhotsk Sea Region: Pimenov (1987) Fig. 81V.

N. Hemisphere: Hultén (1968) p. 705, the lower.

This is a cool-temperate species of large perennial herbs with 1–2 m tall hollow and rather soft stems, 1 or 2 times ternately pinnate leaves, and a few linear-filiform bracteoles. The plants grow in wet places along streams and valleys in mountains. This species is similar in appearance to *A. sachalinensis* in the dried and pressed condition; however, *A. genuflexa* grows in wetter places than *A. sachalinensis*, and has thinner leaves and more clear bracteoles than *A. sachalinensis*.

*Angelica genuflexa* is distributed in the Pacific regions of E. Asia including Japan, Sakhalin, the Kurils and Kamchatka, and extends to northwestern N. America (Hultén 1968, Ohba 1999). It is found in Japan (central

Honshu to Hokkaido), and somewhat abundantly in all parts of both Sakhalin and the Kurils (S+K = 83, Table 1). The S-K index (+0.18) means more or less similar abundance between Sakhalin and the Kurils (Table 2).

**4. *Angelica gmelinii*** (DC.) Pimenov in Novosti. Syst. Vissh. Rast. (1965): 199 (1965); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 250 (1987); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 127 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

*Coelopleurum gmelinii* (DC.) Ledeb., Fl. Ross. **2**: 361 (1844); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 287 (1999).

Japanese name: Ezo-no-shishiudo, Ezo-no-hamaudo (Miyabe and Miyake 1915).

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 12, the upper left.

Okhotsk Sea Region: Pimenov (1987) Fig. 81A.

N. Hemisphere: Hultén (1968) p. 705, the upper.

This is a cool-temperate to subarctic species of stout herbs with 1–1.5 m tall stems, 2 times ternately pinnate thick leaves having ovate to rhombic-ovate ultimate segments, and with many widely linear bracteoles. The plants grow usually in coastal meadows.

In most Japanese literatures this species is placed in the genus *Coelopleurum*, as *C. gmelinii*. I follow

Table 1. A comparison of the number of specimens of the Apiaceae between Sakhalin and the Kurils (KYO, SAPS, SAPT, TI and TNS).

| Taxa                                 | Locality |          |        |          |        | Total |
|--------------------------------------|----------|----------|--------|----------|--------|-------|
|                                      | Regions  | Southern | Middle | Northern | undet. |       |
| 1. <i>Aegopodium alpestre</i>        | Sakhalin | 43       | 21     | 1        | –      | 65    |
|                                      | Kurils   | 25       | –      | –        | –      | 25    |
| 2. <i>Angelica edulis</i>            | Sakhalin | 1        | –      | –        | –      | 1     |
|                                      | Kurils   | –        | –      | –        | –      | 0     |
| 3. <i>Angelica genuflexa</i>         | Sakhalin | 26       | 20     | 2        | 1      | 49    |
|                                      | Kurils   | 15       | 8      | 11       | –      | 34    |
| 4. <i>Angelica gmelinii</i>          | Sakhalin | 38       | 17     | 2        | 1      | 58    |
|                                      | Kurils   | 25       | 35     | 20       | –      | 80    |
| 5. <i>Angelica maximowiczii</i>      | Sakhalin | 17       | 24     | 2        | –      | 43    |
|                                      | Kurils   | –        | –      | –        | –      | 0     |
| 6. <i>Angelica sachalinensis</i>     | Sakhalin | 22       | –      | –        | –      | 22    |
|                                      | Kurils   | 11       | –      | –        | –      | 11    |
| 7. <i>Angelica saxatilis</i>         | Sakhalin | 2        | 1      | –        | –      | 3     |
|                                      | Kurils   | –        | –      | –        | –      | 0     |
| 8. <i>Angelica ursina</i>            | Sakhalin | 16       | 4      | –        | –      | 20    |
|                                      | Kurils   | –        | –      | –        | –      | 0     |
| 9. <i>Anthriscus sylvestris</i>      | Sakhalin | 36       | 14     | 1        | –      | 51    |
|                                      | Kurils   | 17       | 5      | 31       | –      | 53    |
| 10. <i>Bupleurum longiradiatum</i>   | Sakhalin | 53       | 27     | –        | 3      | 83    |
|                                      | Kurils   | 39       | –      | –        | –      | 39    |
| 11. <i>Bupleurum triradiatum</i>     | Sakhalin | 26       | 10     | 3        | 1      | 40    |
|                                      | Kurils   | 13       | –      | –        | –      | 13    |
| 12. <i>Cicuta virosa</i>             | Sakhalin | 34       | 24     | 3        | 3      | 64    |
|                                      | Kurils   | 13       | –      | –        | –      | 13    |
| 13. <i>Conioselinum chinense</i>     | Sakhalin | 23       | 24     | 3        | –      | 50    |
|                                      | Kurils   | 30       | 29     | 1        | –      | 60    |
| 14. <i>Conioselinum filicinum</i>    | Sakhalin | –        | –      | –        | –      | 0     |
|                                      | Kurils   | 10       | 7      | –        | –      | 17    |
| 15. <i>Cryptotaenia japonica</i>     | Sakhalin | 1        | –      | –        | –      | 1     |
|                                      | Kurils   | 1        | –      | –        | –      | 1     |
| 16. <i>Glehnia littoralis</i>        | Sakhalin | 13       | 4      | 2        | 1      | 20    |
|                                      | Kurils   | 10       | 9      | 1        | –      | 20    |
| 17. <i>Heracleum lanatum</i>         | Sakhalin | 27       | 14     | 1        | –      | 42    |
|                                      | Kurils   | 12       | 21     | 12       | –      | 45    |
| 18. <i>Hydrocotyle ramiflora</i>     | Sakhalin | –        | –      | –        | –      | 0     |
|                                      | Kurils   | –        | –      | –        | –      | 0     |
| 19. <i>Liguticum scoticum</i>        | Sakhalin | 48       | 28     | 7        | 2      | 85    |
|                                      | Kurils   | 45       | 32     | 28       | –      | 10    |
| 20. <i>Oenanthe javanica</i>         | Sakhalin | 8        | –      | –        | –      | 8     |
|                                      | Kurils   | 9        | –      | –        | –      | 9     |
| 21. <i>Osmorhiza aristata</i>        | Sakhalin | 18       | 7      | –        | –      | 25    |
|                                      | Kurils   | 6        | –      | –        | –      | 6     |
| 22. <i>Peucedanum terebinthaceum</i> | Sakhalin | 8        | 20     | –        | –      | 28    |
|                                      | Kurils   | 10       | –      | 1        | –      | 11    |

Table 1. *Continued.*

| Taxa  | Locality |          |        |          |        | Total |
|---|----------|----------|--------|----------|--------|-------|
|   | Regions  | Southern | Middle | Northern | undet. |       |
| 23. <i>Phlojodicarpus villosus</i>                            | Sakhalin | 2        | –      | 3        | –      | 5     |
|   | Kurils   | –        | –      | –        | –      | 0     |
| 24. <i>Pleurospermum austriacum</i><br>subsp. <i>uralense</i> | Sakhalin | 26       | 10     | –        | –      | 36    |
|   | Kurils   | 16       | 15     | 8        | –      | 39    |
| 25. <i>Sanicula chinensis</i>                                 | Sakhalin | 1        | –      | –        | –      | 1     |
|   | Kurils   | 7        | –      | –        | –      | 7     |
| 26. <i>Seseli condensatum</i>                                 | Sakhalin | –        | –      | –        | –      | 0     |
|   | Kurils   | –        | –      | –        | –      | 0     |
| 27. <i>Sium suave</i>   | Sakhalin | 18       | 11     | 2        | –      | 31    |
|   | Kurils   | 1        | –      | –        | –      | 1     |
| 28. <i>Sphallerocarpus gracilis</i>                           | Sakhalin | –        | 1      | –        | –      | 1     |
|   | Kurils   | –        | –      | –        | –      | 0     |
| 29. <i>Tilingia ajanensis</i>                                 | Sakhalin | 33       | 11     | 5        | –      | 49    |
|   | Kurils   | 51       | 42     | 29       | –      | 122   |
| 30. <i>Torilis japonica</i>                                   | Sakhalin | –        | –      | –        | –      | 0     |
|   | Kurils   | –        | –      | –        | –      | 0     |

In Sakhalin, “Southern” is the part from <74> to <56>; “Middle” is from <55> to <28>; and “Northern” is from <27> to <4> in the grid (see Fig. 1). In the Kurils, “Southern” is the region of the Habomais <23>, Shikotan <22>, Kunashir <21> and Iturup <20>; “Middle” is the region from Urup <19> to Makanrushi <05>; and “Northern” is the region of Antsiferova <04>, Paramushir <03>, Shumshu <02> and Atlasova <01> (see Fig. 2).

Pimenov’s treatment (1987), which recognizes the section *Coelopleurum* within the genus *Angelica*. A recent phylogenetic study shows an inclusion of two *Coelopleurum* species in an *Angelica* clade (Feng 2009).

*Angelica gmelinii* is distributed in the Pacific regions of E. Asia and N. America, and extends disjunctly to eastern N. America (Hultén 1968). This distribution pattern is similar to that of *Conioselinum chinense*. In E. Asia it occurs in Ussuri, Japan (Hokkaido only), Sakhalin, the Kurils and Kamchatka. It occurs widely and abundantly in Sakhalin and the Kurils (S+K = 138). The S-K index (–0.16) means more or less similar abundance between Sakhalin and the Kurils (Table 2). Within the Kurils this species occurs more frequently in the middle part of the Archipelago (Table 1).

**5. *Angelica maximowiczii*** (F.Schmidt) Benth. ex Maxim. in Bull. Acad. Imp. Sci. Saint-Petersbourg **19**: 274 (1874); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 261 (1987); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Hosoba-senkyū (Miyabe and Miyake 1915).

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 12, second from the

upper left.

Okhotsk Sea Region: Pimenov (1987) Fig. 85A.

This is a cool-temperate species of perennial herbs with 0.2–1 m tall somewhat slender stems, 2 to 4 times ternately pinnate triangular-ovate leaves having linear to ovate-lanceolate ultimate segments. The plants grow mostly in dry sandy forest-edges.

*Angelica maximowiczii* is distributed in E. Siberia, NE. China, Korea and Sakhalin (Pimenov 1987). It occurs widely and moderately (S+K = 43) in southern to northern Sakhalin, with relatively high abundance in the middle part (Table 1); however, is absent in Hokkaido and the Kurils, which is indicated by its extreme positive S-K index (+1.00, Table 2).

**6. *Angelica sachalinensis*** Maxim., Prim. Fl. Amur.: 127 (1859); Pimenov in Charkevich et al., Pl. Vasc. Prient. Extr. Soviet. **2**: 253 (1987); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 127 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

*Angelica anomala* Avé-Lall. subsp. *sachalinensis* (Maxim.) H. Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 299 (1999).

Japanese name: Ezo-no-yoroigusa (Miyabe and Miyake 1915).

[Representative distribution maps]

Table 2. A comparison of S–K index and S+K of the Apiaceae between Sakhalin and the Kurils (KYO, SAPS, SAPT, TI and TNS). Taxa are listed in order of S-K index.

| Taxa (the number in text)                                   | Sakhalin (S) | Kurils (K) | S–K        | S+K         | S-K index    |
|---|--------------|------------|------------|-------------|--------------|
| <i>Angelica edulis</i> (3)                                  | 1            | 0          | 1          | 1           | +1.00        |
| <i>Sphallerocarpus gracilis</i> (28)                        | 1            | 0          | 1          | 1           | +1.00        |
| <i>Angelica saxatilis</i> (7)                               | 3            | 0          | 3          | 3           | +1.00        |
| <i>Phlojodicarpus villosus</i> (23)                         | 5            | 0          | 5          | 5           | +1.00        |
| <i>Angelica ursina</i> (8)                                  | 20           | 0          | 20         | 20          | +1.00        |
| <i>Angelica maximowiczii</i> (6)                            | 43           | 0          | 43         | 43          | +1.00        |
| <i>Sium suave</i> (27)                                      | 31           | 1          | 30         | 32          | +0.94        |
| <i>Cicuta virosa</i> (12)                                   | 64           | 13         | 51         | 77          | +0.66        |
| <i>Osmorhiza aristata</i> (21)                              | 25           | 6          | 19         | 31          | +0.61        |
| <i>Bupleurum triradiatum</i> (11)                           | 40           | 13         | 27         | 53          | +0.51        |
| <i>Peucedanum terebinthaceum</i> (22)                       | 28           | 11         | 17         | 39          | +0.44        |
| <i>Aegopodium alpestre</i> (1)                              | 65           | 25         | 40         | 90          | +0.44        |
| <i>Bupleurum longiradiatum</i> (10)                         | 83           | 39         | 44         | 122         | +0.36        |
| <i>Angelica sachalinensis</i> (2)                           | 22           | 11         | 11         | 33          | +0.33        |
| <i>Angelica genuflexa</i> (4)                               | 49           | 34         | 15         | 83          | +0.18        |
| <i>Cryptotaenia japonica</i> (15)                           | 1            | 1          | 0          | 2           | 0.00         |
| <i>Glehnia littoralis</i> (16)                              | 20           | 20         | 0          | 40          | 0.00         |
| <i>Anthriscus sylvestris</i> (9)                            | 51           | 53         | –2         | 104         | –0.02        |
| <i>Heracleum lanatum</i> (17)                               | 42           | 45         | –3         | 87          | –0.03        |
| <i>Pleurospermum austriacum</i> subsp. <i>uralense</i> (24) | 36           | 39         | –3         | 75          | –0.04        |
| <i>Oenanthe javanica</i> (20)                               | 8            | 9          | –1         | 17          | –0.06        |
| <i>Conioselinum chinense</i> (13)                           | 50           | 60         | –10        | 110         | –0.09        |
| <i>Liguticum scoticum</i> (19)                              | 85           | 105        | –20        | 190         | –0.11        |
| <i>Angelica gmelinii</i> (5)                                | 58           | 80         | –22        | 138         | –0.16        |
| <i>Tilingia ajanensis</i> (29)                              | 49           | 122        | –73        | 171         | –0.43        |
| <i>Sanicula chinensis</i> (25)                              | 1            | 7          | –6         | 8           | –0.75        |
| <i>Conioselinum filicinum</i> (14)                          | 0            | 17         | –17        | 17          | –1.00        |
| <i>Hydrocotyle ramiflora</i> (18)                           | 0            | 0          | 0          | 0           | –            |
| <i>Seseli condensatum</i> (26)                              | 0            | 0          | 0          | 0           | –            |
| <i>Torilis japonica</i> (30)                                | 0            | 0          | 0          | 0           | –            |
| <b>Total</b>  | <b>881</b>   | <b>711</b> | <b>170</b> | <b>1592</b> | <b>+0.11</b> |

Sakhalin: Smirnov (2002) p. 12, second from the lower left.

Okhotsk Sea Region: Pimenov (1987) Fig. 82A.

This is a cool-temperate species of large perennial herbs with 1–2 m tall, hollow, slender and red-tinged stems. The plants have obovate and inflated leaf sheaths in apical part of stem, 2 or 3 times ternately pinnate triangular leaves with rather thick often again 2- or 3-fid or -parted narrowly ovate leaflets, usually without bracts and bracteoles. They grow in meadows to forest-edges of lowlands and mountains.

This taxon and its relatives in the Russian Far East are recognized by Pimenov (1987) as the following three geographically differentiated species: *A. cincta* Boissieu in E. Siberia, NE. China and Korea including northern Sakhalin; *A. dahurica* (Fisch.) Benth. et Hook. f. ex Franch. et Sav. in E. Siberia; and *A. sachalinensis* Maxim. in Sakhalin, the southern Kurils and Hokkaido. According to Pimenov (1987), *A. cincta*, which is

closely related to *A. sachalinensis*, was reported from northern Sakhalin, but this species was not noticed by Smirnov (2002) in Sakhalin. In this study, I included “*A. cincta*” in *A. sachalinensis*, which has been supported by a recent molecular phylogenetic study (Feng et al. 2009). Ohba (1999) regards *A. sachalinensis* as a subspecies of *A. anomala* (i.e., *A. anomala* subsp. *sachalinensis*), but I do not follow this opinion here because of a distant phylogenetic affinity shown in Feng et al. (2009).

*Angelica sachalinensis* is distributed in E. Siberia, N. and NE. China, Korea, Japan (central Honshu to Hokkaido), Sakhalin and the Kurils. The distribution of this species is confined to the southern part of both Sakhalin and the Kurils, and it occurs moderately in these regions (S+K = 33; Table 1). The S-K index (+0.33) means a distribution bias more or less toward Sakhalin (Tables 1 and 2).

**7. *Angelica saxatilis*** Turcz. ex Ledeb., Fl. Ross. **2**: 296 (1844); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 250 (1987); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

*Coelopleurum multisectum* (Maxim.) Kitag. [in Bot. Mag. Tokyo **51**: 807 (1937)] var. *trichocarpum* (H.Hara) H.Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 288 (1999).

Japanese name: Ezoyama-zengo

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 12, the lower left.

Okhotsk Sea Region: Pimenov (1987) Fig. 81B.

This is a species of perennial herbs with 20–40 cm tall stems, growing in sunny rocky places of high mountains. This species is closely related to maritime *A. gmelinii* (= *Coelopleurum gmelinii*), but is distinguished from *A. gmelinii* by having smaller ultimate leaf segments and more pubescent fruits.

*Angelica saxatilis* is distributed in E. Siberia, Hokkaido and Sakhalin. Barkalov and Taran (2004) recorded this species from middle and northern Sakhalin. In the present study three specimens were confirmed only from southern and middle Sakhalin, but no specimens were found in the Kurils (S+K = 3 and S-K index = +1.00, Table 1).

**8. *Angelica ursina*** (Rupr.) Maxim. in Bull. Acad. Imp. Sci. Saint-Petersbourg **22**: 258 (1876); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 256 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 299 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 127 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Ezo-nyū.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 12, the upper right.

Okhotsk Sea Region: Pimenov (1987) Fig. 83A.

This is a cool-temperate species of gigantic perennial herbs with 1–3 m tall stout and somewhat red-tinged stems, 2 or 3 times ternately pinnate leaves with again pinnatifid to pinnately parted narrowly ovate-oblong leaflets. The plants grow in forest-edges to meadows of low mountains to coastal regions.

*Angelica ursina* is distributed from E. Siberia, through Japan (northern Honshu to Hokkaido), Sakhalin and the Kurils to Kamchatka. It occurs somewhat rarely in southern and middle Sakhalin, and its distribution is biased in favor of the southern part (S+K = 20, Table 1). It has been reported from the southern Kurils (Kunashir; Pimenov 1987, Barkalov and Eremenko 2003), but at present there are no specimens from the Kurils in the main Japanese herbaria (S-K index = +1.00, Tables 1 and 2). As this species is actually present in Kunashir (my personal observation in 2009), the absence of specimens in Japanese herbaria should be attributed to low enthusiasm for collection by gigantic plant size of this species.

**9. *Anthriscus sylvestris*** (L.) Hoffm., Gen. Umbell. **1**: 40 (1814); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 273 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 278 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 127 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Shaku.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 12, second from the upper right.

Okhotsk Sea Region: Pimenov (1987) Fig. 88A.

N. Hemisphere: Hultén and Fries (1986) Map 1388.

This is a temperate species of perennial herbs with 0.8–1.5 m tall somewhat slender and branched stems, 2 or 3 times ternately pinnate ovate-triangular leaves having pinnatifid acute or acuminate ultimate segments. The plants grow in moist forests to forest-edges in mountains.

*Anthriscus sylvestris* is distributed widely in Europe through Siberia to NE. Eurasia: China, Korea, Japan (Kyushu to Hokkaido), Sakhalin and the Kurils to Kamchatka. It occurs widely (S-K index = –0.02, Table 1) and abundantly (S+K = 104; Table 2) in Sakhalin and the Kurils, but with low abundance in the middle Kurils (Table 1).

**10. *Bupleurum longiradiatum*** Turcz. in Bull. Soc. Imp. Naturalistes Moscou **17**(4): 719 (1844); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 218 (1987); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 127 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

*Bupleurum longiradiatum* Turcz. var. *breviradiatum* F.Schmidt ex Maxim. in Mem. Pres. Acad. Sci. Petersb. Div. Sav. **9**: 125 (1859); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 276 (1999).

*Bupleurum longiradiatum* Turcz. var. *shikotanense* (M. Hiroe) Ohwi in Bull. Nat. Sci. Mus. Tokyo (33): 80 (1953); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 277 (1999).

Japanese name: Hotaru-saiko (in broad sense).

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 12, second from the lower right.

Okhotsk Sea Region: Pimenov (1987) Fig. 74A.

This is a temperate species of perennial herbs with 0.2–1 m tall stems, entire and simple leaves, growing in mountains to coastal meadows. Stoutness of plants and length of bracteoles and pedicels are very variable depending on the different habitats.

*Bupleurum longiradiatum* is native to Amur, China, Korea, Japan (Kyushu to Hokkaido), Sakhalin and the Kurils. Several infraspecific varieties have been recorded within Japan (Ohba 1999), and plants of Shikotan have been regarded as var. *shikotanense* (M. Hiroe) Ohwi in having longer bracteoles than pedicels and lower 20–30cm stems.

It occurs abundantly (S+K = 122) in southern and middle Sakhalin, but only in the southern Kurils;

Shikotan and Kunashir (Table 1; Habomais also in Barkalov and Eremenko 2003 and Gage et al. 2006). The S-K index (+0.36) means that *B. longiradiatum* occurs somewhat more abundantly in Sakhalin than the Kurils (Table 2).

**11. *Bupleurum triradiatum*** Adams ex Hoffm., Gen. Umbell.: 115 (1814); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 217 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 276 (1999); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Reibun-saiko.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 12, the lower right.

Okhotsk Sea Region: Pimenov (1987) Fig. 73G.

N. Hemisphere: Hultén (1968) p. 698, the lower.

This is a subalpine to alpine species of low perennial herbs with 5–15 cm tall stems, entire and simple leaves, growing in stony alpine meadows.

*Bupleurum triradiatum* is native from Siberia through N. Asia including Hokkaido, Sakhalin and the Kurils, and to Alaska (Hultén 1968). It is found in southern to northern Sakhalin, but only in the southern Kurils; Shikotan only (but Kunashir also in Pimenov 1987), although I could not find the specimen of Kunashir in the main Japanese herbaria. Pimenov (1987) noted its distribution as “the northern Kurils (?)”, but because there are no specimens from the northern Kurils in the main Japanese herbaria and no records in Hultén’s map (1968), its presence should be re-examined. The specimens of *B. triradiatum* (S+K = 53) are about half as many as those of *B. longiradiatum* (S+K = 122). Somewhat high positive S-K index (+0.51) indicates that this species occurs more abundantly in Sakhalin than in the Kurils (Table 2).

**12. *Cicuta virosa*** L., Sp. Pl.: 255 (1753); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 223 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 282 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 128 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Doku-zeri; Hosoba-dokuzeri for var. *tenuifolia* (Miyabe and Miyake 1915)

[Representative distribution maps]

Sakhalin: Smirnov (2002) p.13, second from the upper left.

Okhotsk Sea Region: Pimenov (1987) Fig. 76A.

N. Hemisphere: Hultén and Fries (1986) Map 1412.

This is a temperate species of glabrous and toxic perennial herbs with 0.6–1.0 m tall, much branched hollow stems, thick and jointed rhizomes, 2 times pinnate triangular-ovate leaves having linear-lanceolate to widely lanceolate ultimate segments. The width of leaflets shows much variation among the plants. The plants grow in wet places in lowlands.

*Cicuta virosa* is distributed widely in Europe,

Siberia, China, Korea, Kamchatka, Japan (Kyushu to Hokkaido), Sakhalin and the Kurils. It occurs soemwaht abundantly (S+K = 77) in southern to northern Sakhalin, but only in the southern Kurils; Shikotan, Kunashir and Iturup (Habomais also in Barkalov and Eremenko 2003 and Gage et al. 2006). High positive S-K index (+0.66) means that the distribution is biased in favor of Sakhalin.

**13. *Conioselinum chinense*** (L.) Britt., Pogg. et Sterns, Prelim. Cat.: 22 (1888); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 247 (1987); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 128 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

*Conioselinum kamtschaticum* auct., non Rupr. in Beitr. Pflanzenk. Russ. Reiches **11**: 22 (1859); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 288 (1999).

Japanese name: Karafuto-ninjin.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 13, second from the lower left.

Okhotsk Sea Region: Pimenov (1987) Fig. 80D.

N. Hemisphere: Hultén (1968) p. 704, the lower; Hultén and Fries (1987) Map 1419.

This is a cool-temperate to subarctic species of perennial herbs with 20–80 cm tall stems, short and thick rhizomes, 3 times ternately pinnate triangular thick leaves having pinnatifid narrowly to widely ovate ultimate segments. The plants grow typically in sunny coastal meadows.

The species name “*Conioselinum kamtschaticum*” has been adopted in the most Japanese literatures, but in the present study I follow the Pimenov’s treatment (1987).

Maritime species “*C. kamtschaticum*” is generally distinguished well from next mountain species *C. filicinum* (H. Wolff) H.Hara in Hokkaido. But in eastern Hokkaido (Shiretoko Pen.) and the southern Kurils (Iturup and Urup), the plants morphologically intermediate between “*C. kamtschaticum*” and *C. filicinum* are found sometimes along the streams near the sea. By the presence of these intermediate plants, it is often difficult to distinguish the two species constantly in eastern Hokkaido and the southern Kurils; Iturup and Urup.

*Conioselinum chinense* is distributed in the Pacific regions of E. Asia and N. America, and also in eastern N. America (Hultén 1968, Hultén and Fries 1987). It is found in Japan (northern Honshu to Hokkaido), and widely and abundantly in most parts of both Sakhalin and the Kurils (S+K = 110, S-K index = –0.09; Tables 1 and 2), especially with high abundance in the southern and middle parts in both the regions.

**14. *Conioselinum filicinum*** (H. Wolff) H.Hara in J. Jap. Bot. **18**: 28 (1942); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 289 (1999).

Japanese name: Miyama-senkyū.

[Representative distribution maps]

Absent.

This is a cool-temperate species of perennial herbs with 40–80 cm tall stems, growing in forests to forest-edges in lowlands to subalpine regions. Probably *Conioselinum chinense* sensu Russian authors from the Kuril Islands includes *C. filicinum* recognized in this study. As stated already, it is sometimes difficult to recognize mountain *Conioselinum filicinum* from maritime *C. chinense* in eastern Hokkaido, Iturup and Urup. Hybridization between the two species may occur in these regions. In the present study I listed both the pure *C. filicinum* plants and the intermediate plants between *C. filicinum* and *C. chinense* under this species name (see Appendix).

*Conioselinum filicinum* is native to Japan (central Honshu to Hokkaido) and the Kurils (Tatewaki 1957, Kitagawa 1982, Ohba 1999), but Russian authors have not reported this species from the Kurils. This species occurs somewhat rarely in the southern and middle Kurils; Kunashir, Iturup and Urup, but not in Sakhalin (S+K = 17 and S-K index = -1.00, Tables 1 and 2).

**15. *Cryptotaenia japonica*** Hassk. in Retzia **1**: 113 (1855); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 214 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 273 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 128 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Mitsuba.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 13, the upper right.

Okhotsk Sea Region: Pimenov (1987) Fig. 73B.

This is a temperate species of glabrous perennial herbs with 30–60 cm tall stems, cordate-triangular, 3-foliate leaves having widely rhombic-ovate to widely ovate terminal leaflets. The plants grow in forests of hills and mountains. They are sometimes cultivated as a vegetable in Japan.

*Cryptotaenia japonica* is native to China, Korea, Japan (Ryukyu to Hokkaido), Sakhalin and the Kurils. The presence of this species in Sakhalin has not been noticed in Japanese literatures (Miyabe and Miyake 1915, Sugawara 1940, Ohba, 1999), but recent Russian literatures (Pimenov 1987, Smirnov 2002, Barkalov and Taran 2004) have reported the occurrences in southern Sakhalin and I could find an old Sakhalin specimen in TI (Tohutsu, collected by Hara in 1928). But it will be certainly rare in southern Sakhalin. There is only one specimen from Kunashir in SAPS (Chinomichi, collected by Tatewaki in 1923) within the main Japanese herbaria, so this species occurs very rarely in the southern Kurils (Kunashir only; Tatewaki 1957, Barkalov and Eremenko 2003). Rare occurrences of *C. japonica* in the southern part of both Sakhalin and the Kurils, are shown by few specimens confirmed (S+K = 2; Table 2).

**16. *Glehnia littoralis*** F.Schmidt ex Miq., Ann. Mus. Bot. Lugd.-Bat. **3**: 61 (1867, I-VII); Pimenov in

Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 267 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 285 (1999), author names as “F.Schmidt in Miq.”; Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 128 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Hama-bōhū.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 13, second from the upper right.

Okhotsk Sea Region: Pimenov (1987) Fig. 86D.

N. Hemisphere: Hultén (1968) p. 706, the upper.

This is a temperate species of perennial herbs with dense white hairs, 5–30 cm tall stems, elongated rhizomes, 1 or 2 times ternately pinnate triangular leaves having rather thick often 3-lobed elliptic to obovate-elliptic leaflets. The plants grow on sandy beaches.

*Glehnia littoralis* is distributed in China, Taiwan, Korea, Ussuri, Okhotsk (not in Kamchatka), Japan (Ryukyu to Hokkaido), Sakhalin and the Kurils, and it extends to the Pacific coast of N. America (Ohba 1999). It occurs moderately in the southern to northern parts of Sakhalin and the Kurils (S+K = 40, Table 1). The S-K index (0.00) means more or less similar abundance between Sakhalin and the Kurils (Tables 1 and 2).

**17. *Heracleum lanatum*** Michx., Fl. Bor.-Amer. **1**: 166 (1803); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 269 (1987); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 129 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

*Heracleum sphondylium* L. subsp. *montanum* (Schleich. ex Gaudin) Briq. in Schinz et R.Keller, Fl. Schweiz ed. 2, **1**: 372 (1905); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 302 (1999).

Japanese name: Ō-hanaudo, Hana-udo.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 13, second from the lower right.

Okhotsk Sea Region: Pimenov (1987) Fig. 87B.

N. Hemisphere: Hultén (1968) p. 707, the upper.

This is a cool-temperate species of perennial herbs with 1–2 m tall hollow usually pubescent stems, relatively thin pinnately 3-foliate leaves having widely ovate-cordate leaflets. The plants grow in grassy meadows of lowlands to mountains.

There are taxonomic problems on the species demarcation in *Heracleum* (Hultén and Fries 1987; Ohba 1999). I follow the opinion of Hultén (1968) and Pimenov (1987).

*Heracleum lanatum* is distributed from N. America through the northern Pacific regions to Japan and its neighbors. It is native to Honshu and Hokkaido in Japan, and Sakhalin and the Kurils. It occurs widely and somewhat abundantly in the southern to northern parts of both Sakhalin and the Kurils (S+K = 87, Table 1). Within the Kurils it occurs especially more frequently in the middle part of the Archipelago (Table 1).

**18. *Hydrocotyle ramiflora*** Maxim. in Bull. Acad. Imp. Sci. Saint-Petersbourg **31**: 46 (1887); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 207 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 269 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 129 (2003).

Japanese name: Ō-chidome

[Representative distribution maps]

Sakhalin: absent in Smirnov (2002).

Okhotsk Sea Region: Pimenov (1987) Fig. 72A.

This is a temperate species of perennial herbs which have long creeping slender stems with up to 15 cm long ascending branches and orbicular-cordate simple leaves. The plants grow in sunny and moist places in lowlands and hills.

*Hydrocotyle ramiflora* is native to Korea and Japan (Kyushu to Hokkaido) (Ohba, 1999). The presence of this species in the southern Kurils; Kunashir and Iturup has been reported in the Russian literatures (Pimenov 1987; Barkalov and Eremenko 2003). But it has not been reported from the Kurils in the previous Japanese literatures (Tatewaki 1957, Hiroe 1958, Ohba 1999) and no specimens could be found from the Kurils in the main Japanese herbaria (Table 1). Possibly this species has been naturalized in the southern Kurils by human activities after the World War II. There is no record from Sakhalin.

**19. *Ligusticum scoticum*** L., Sp. Pl.: 250 (1753); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 239 (1987); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 129 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

*Ligusticum hultenii* Fernald in Rhodora **32**: 7 (1930); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 287 (1999).

Japanese name: Maruba-tōki.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 14, second from the upper left.

Okhotsk Sea Region: Pimenov (1987) Fig. 79B.

N. Hemisphere: Hultén (1968) the lower; Hultén and Fries (1986) Map 1417.

This is a cool-temperate species of perennial herbs with 0.3–1 m tall red tinged glabrous stems, relatively thick 2 times ternately pinnate widely triangular-orbicular leaves having widely rhombic-ovate ultimate segments. The plants grow in meadows or rocky places near seashores.

*Ligusticum scoticum* is a circumpolar maritime species discontinuously found in N. Hemisphere, and the plants of the Pacific regions are sometimes treated as a separate species *L. hultenii* or a separate subspecies *L. scoticum* subsp. *hultenii*. In the present study, I recognize the single circumpolar species; *L. scoticum* (cf. Kitamura and Murata 1961, p. 21).

It is found in Japan (northern Honshu to Hokkaido), and occurs very abundantly in all parts of both Sakhalin and the Kurils (S+K = 190, S-K index = -0.11; Tables 1 and 2).

**20. *Oenanthe javanica*** (Blume) DC., Prodr. **4**: 138 (1830); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 231 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 280 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 129 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Seri.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 14, second from the lower left.

Okhotsk Sea Region: Pimenov (1987) Fig. 78B.

This is a temperate species of glabrous perennial herbs with 20–40 cm tall stems and long stolons, 1 or 2 times pinnate triangular leaves having ovate or narrowly ovate ultimate segments. The plants grow in wet places in lowlands. They are sometimes cultivated as a vegetable in Japan.

*Oenanthe javanica* is distributed in Australia, Himalaya, India, Malaysia, China, Taiwan, Japan (Ryukyu to Hokkaido), Sakhalin and the Kurils. It occurs somewhat rarely (S+K = 17; Table 2) in southern Sakhalin and the southern Kurils; Kunashir and Iturup (Table 1 and Appendix; Shikotan also in Pimenov 1987 and Barkalov and Eremenko 2003).

**21. *Osmorhiza aristata*** (Thunb.) Rydb., Bot. Surv. Nebraska **3**: 37 (1894); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 275 (1999); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004), author names as "(Thunb.) Makino et Y.Yabe".

*Uraspermum aristatum* (Thunb.) Kuntze, Revis. Gen. Pl. **1**: 270 (1891); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 272 (1987); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 131 (2003).

*Osmorhiza aristata* (Thunb.) Rydb. var. *montana* Makino in J. Jap. Bot. **2**: 7 (1918); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 275 (1999).

Japanese name: Yabu-ninjin; Onaga-yabu-ninjin (Miyabe and Miyake 1915), Miyama-yabu-ninjin.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 14, the lowest left.

Okhotsk Sea Region: Pimenov (1987) Fig. 87E.

This is a temperate species of pubescent perennial herbs with 40–60 cm tall stems, 2 or 3 times ternately pinnate triangular and acute leaves having triangular-ovate ultimate segments. The plants grow in woods in hills and mountains.

*Osmorhiza aristata* is distributed in E. Siberia, Korea, Japan (Kyushu to Hokkaido), Sakhalin and the Kurils. It occurs moderately in the southern to middle parts of Sakhalin and in the southern Kurils; Kunashir and Iturup (S+K = 31, Table 1 and Appendix). The S-K index (+0.61) indicates that this species occurs more abundantly in Sakhalin than in the Kurils (Table 2).

**22. *Peucedanum terebinthaceum*** (Fisch. ex Spreng.) Fisch. ex Turcz., Cat. Pl. Baic.: 93 (1838); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 301 (1999), authors as "(Fisch.) Fisch. ex Turcz."

*Kitagawia terebinthacea* (Fisch. ex Spreng.) Pimenov in Bot. Zhurn. (St. Petersburg) **71**(7): 944 (1986); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 263 (1987); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 129 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Kawara-bōhū.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 14, the upper left (as *Kitagawia terebinthacea*).

Okhotsk Sea Region: Pimenov (1987) Fig. 86A (as *Kitagawia terebinthacea*).

This is a temperate species of perennial herbs with 30–80 cm tall stems, ternately pinnate widely ovate leaves having somewhat pinnately cleft and again incised, widely ovate to triangular leaflets. The plants grow in dry places in mountains.

Recent Russian authors adopt the genus name *Kitagawia*, but in the present study I use the traditional genus name *Peucedanum*.

*Peucedanum terebintheceum* is distributed in E. Siberia, NE. China, Korea, Japan (Kyushu to Hokkaido), Sakhalin and the Kurils. It occurs moderately in south to middle Sakhalin and in the southern and northern Kurils (S+K = 39, Table 1). The specimen from the northern Kurils in TNS (Paramushir, collected by Koidzumi in 1924) is far distant from the main southern distribution region in the Kurils (see Appendix). Somewhat positive S-K index (+0.44) means that the distribution is relatively biased in favor of Sakhalin (Table 2).

**23. *Phlojodicarpus villosus*** (Turcz. ex Fisch. et C.A.Mey.) Ledeb., Fl. Ross. **2**: 331 (1844); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 235 (1987); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Takasu-zeri as *Johrenia villosa* (Kudo 1924), Hosobano-ibukibōhū as *Seseli libanotis* var. *angustissima* (Sugawara 1937).

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 14, the upper right.

Okhotsk Sea Region: Pimenov (1987) Fig. 78V.

N. Hemisphere: Hultén (1968) p. 704, the upper.

This is an arctic or alpine species of perennial and glaucous herbs with up to 40 cm tall stems, 2 or 3 times pinnate glabrous leaves, growing on stony tundra.

*Phlojodicarpus villosus* is distributed in Siberia, Mongol to the Russian Far East (Hultén 1968). It has been recorded in the northern part of Sakhalin (Sugawara 1940, Pimenov 1987, Smirnov 2002, Barkalov and Taran 2004). Additionally the specimens from southern Sakhalin could be confirmed in KYO and SAPT (collected by Sugawara in 1932, see Appendix). It occurs rarely in Sakhalin (S+K = 5) and does not occur

in the Kurils and Japan (S-K index = +1.00).

**24. *Pleurospermum austriacum*** (L.) Hoffm. subsp. **uralense** (Hoffm.) Sommier, Fl. Ob Inf.: 73 (1893); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 284 (1999).

*Pleurospermum uralense* Hoffm., Gen. Umbell.: 9 (1814); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 212 (1987); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 130 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Ō-kasamochi.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 14, second from the upper right (as *P. uralense*).

Okhotsk Sea Region: Pimenov (1987) Fig. 73A (as *P. uralense*).

N. Hemisphere: Hultén and Fires (1986) Map 1407, as *P. austriacum*.

This is a cool-temperate to subarctic species of stout perennial herbs with up to 1.5 m tall stems, 2 times ternately pinnate widely ovate-triangular leaves having narrowly ovate ultimate segments. The plants grow in sunny places in hills and mountains.

*Pleurospermum austriacum* is distributed widely in Eurasia; continuously from Europe to Asia (Tatewaki 1957, Ohba 1999). Eastern Russian and Asiatic plants are regarded as another subspecies *uralense*. Although most recent Russian authors have used *P. uralense* as a distinct species from *P. austriacum*, I adopt the subspecific rank in the present study because of the lack of distinct geographic independence of east Eurasian population in this species.

*Pleurospermum austriacum* subsp. *uralense* is distributed in Siberia, Ussuri, NE. China, Korea, Japan (central Honshu to Hokkaido), Sakhalin and the Kurils, and it extends to Kamchatka (Ohba 1999). It occurs somewhat abundantly in southern and middle Sakhalin, and in the southern to northern Kurils (S+K = 75, Tables 1 and 2). The S-K index (–0.04) indicates more or less similar abundance between Sakhalin and the Kurils.

**25. *Sanicula chinensis*** Bunge, Enum. Pl. China Bor.: 106 (1833); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 210 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 272 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 130 (2003).

Japanese name: Umano-mitsuba.

[Representative distribution maps]

Sakhalin: not listed in Smirnov (2002).

Okhotsk Sea Region: Pimenov (1987) Fig. 72B.

N. Hemisphere: Hultén and Fries (1986) Map 1383.

This is a temperate species of perennial herbs with 30–60 cm tall stems, 5-angled reniform-cordate trisected leaves having rhombic-obovate lobes or segments. The plants grow in woods of low mountains.

This species is regarded as an east Asiatic species composing the *S. europaea* L. complex which has a

circumpolar distribution (Hultén and Fries 1986).

*Sanicula chinensis* is distributed in China, Korea, Japan (Kyushu to Hokkaido), Sakhalin and the Kurils. It occurs rarely in southern Sakhalin and the southern Kurils; Kunashir only (S+K = 8, Table 1 and Appendix). Hiroe (1958) cited the specimen of this species from southern Sakhalin in KYO (Soriofka [Solove'vka], collected by Faurie 376 in 1908) and that specimen was verified in this study. On the other hand, recent Russian literatures (Pimenov 1987, Smirnov, 2002, Barkalov and Taran 2004) have not supported the presence in Sakhalin. Miyabe and Miyake (1915) noticed the only presence from Sakaehama [Starodubskoye] of southern Sakhalin, but no Sakhalin specimens could be found in SAPS. Thus I expect that *Sanicula chinensis* occurs very rarely in southern Sakhalin. But it occurs somewhat moderately in Kunashir (K= 7; Table 1).

**26. *Seseli condensatum*** (L.) Rchb.f., Icon. Fl. Germ. **21**: 37 (1867); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 232 (1987); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: absent.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 14, second from the lower right.

Okhotsk Sea Region: Pimenov (1987) Fig. 77V.

This is a continental boreal species of perennial herbs with 30–80cm tall stems, 2 times pinnate leaves, growing in wet meadows to forests.

*Seseli condensatum* is distributed in Europe, Siberia, Mongol to the Russian Far East. It has been recorded from the northern part of Sakhalin (Schmidt peninsula; Pimenov 1987, Smirnov 2002, Barkalov and Taran 2004), but not from the Kurils and Japan. The Sakhalin specimens of this species could not be found in the main Japanese herbaria (Table 1), mainly owing to the scarcity of field research in the northern Sakhalin by Japanese botanists.

**27. *Sium suave*** Walter, Fl. Carol.: 115 (1788); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 230 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 283 (1999); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

*Sium suave* Walter var. *nipponicum* (Maxim.) H.Hara in J. Fac. Sci. Univ. Tokyo sect. 3, Bot. **6**: 95 (1952), in adnot.; Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 283 (1999).

*Sium suave* Walter var. *ovatum* (Y.Yatabe) H.Hara in J. Fac. Sci. Univ. Tokyo sect. 3, Bot. **6**: 95 (1952), in adnot.; Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 283 (1999).

Japanese name: Numa-zero (as the species rank), Hosoba-numazeri.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 14, the lower right.

Okhotsk Sea Region: Pimenov (1987) Fig. 78A.

N. Hemisphere: Hultén (1968) the lower.

This is a temperate species of perennial herbs with 60–100 cm tall stems and short creeping rhizomes,

pinnate leaves having 7–9 sessile narrowly ovate leaflets. The plants grow in wet places in lowlands. There are some infraspecific names based on different width of leaflets, but I recognize the single species without any recognition of infraspecific taxa.

*Sium suave* is distributed in Siberia, Japan (Kyushu to Hokkaido), Sakhalin, the Kurils, Kamchatka, and North America (Hultén 1968). It occurs moderately in southern to northern Sakhalin, but very rarely in the southern Kurils (S+K = 32, S-K index = +0.94). Although it has not been reported in the Kurils (Tatewaki 1957; Pimenov 1987), the only specimen from the Kurils was verified in TNS (Kunashir, collected by Koidzumi, H. 21817 in 1929). This species occurs very rarely in the southern Kurils.

**28. *Sphallerocarpus gracilis*** (Bess. ex Trev.) K.-Pol. in Bull. Soc. Nat. Moscou, n.s. **29**: 202 (1916); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 274 (1987); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 130 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Zūe-sō.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 15, the upper left.

Okhotsk Sea Region: Pimenov (1987) Fig. 88B.

This is a cool-temperate to subarctic continental species of glabrous perennial herbs with 1.0–1.5 m tall stems, growing on meadows. It is similar to *Anthriscus sylvestris* in general appearance, but the ellipsoid-oblong fruits of this species is clearly different from lanceolate ones of *A. sylvestris*.

*Sphallerocarpus gracilis* is found sporadically in E. Siberia, Mongol, China, Korea, Sakhalin, the Kurils, Kamchatka to the Chukotskiy Peninsula (Pimenov 1987). It does not occur in Japan. It has been recorded rarely from Sakhalin and the southern Kurils (Pimenov 1987, Barkalov and Eremenko 2003, Barkalov and Taran 2004). In the main Japanese herbaria only one Sakhalin specimen was found in SAPT (Handa, collected by Sugawara in 1931), but no specimens of the Kurils were found in Japanese herbaria (S+K = 1, Table 1). This species should occur very rarely in Sakhalin and the southern Kurils.

**29. *Tilingia ajanensis*** Regel in Regel and Tiling, Fl. Ajan.: 97 (1858); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 241 (1987); Ohba in Iwatsuki et al., Fl. Jap. **IIc**: 286 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 130 (2003); Barkalov and Taran in Storozhenko et al., Fl. Faun. Sakh. Isl. **1**: 50 (2004).

Japanese name: Shirane-ninjin, Chishima-ninjin.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 15, second from the upper left.

Okhotsk Sea Region: Pimenov (1987) Fig. 79G.

N. Hemisphere: Hultén (1968) the lower (as *Cnidium ajanense*).

This is a cool-temperate to arctic species of small perennial herbs with 7–20 (rarely –35) cm tall stems, 2–4 times ternately pinnate leaves having widely ovate to narrowly oblong ultimate segments, with few but distinct linear bracteoles. The plants grow in subalpine and alpine rocky meadows.

*Tilingia ajanensis* is distributed in E. Siberia, Okhotsk, Kamchatka, the Chukotskiy Peninsula, Japan (central Honshu to Hokkaido), Sakhalin and the Kurils, and very rarely in Alaska (Hultén 1968). It occurs widely and very abundantly ( $S+K = 171$ ) in the southern to northern parts of both Sakhalin and the Kurils, and the high negative S-K index (–0.43) means that *T. ajanensis* occurs more abundantly in the Kurils than in Sakhalin (Table 2).

**30. *Torilis japonica*** (Houtt.) DC., Prodr. 4: 219 (1830); Pimenov in Charkevich et al., Pl. Vasc. Orient. Extr. Soviet. 2: 276 (1987); Ohba in Iwatsuki et al., Fl. Jap. IIc: 274 (1999); Barkalov and Eremenko, Fl. Nat. Res. Kur. Pres. Little Kur.: 131 (2003).

Japanese name: Yabu-jirami.

[Representative distribution maps]

Sakhalin: not listed in Smirnov (2002).

Okhotsk Sea Region: Pimenov (1987) Fig. 88D.

N. Hemisphere: Hultén and Fries (1986) Map 1433.

This is a temperate species of short appressed setose biennials with 30–70 cm tall stems, 2 times ternately pinnate ovate-triangular acute leaves having narrowly ovate, pinnatifid ultimate segments. The plants grow in forest-edges and roadsides in lowlands.

*Torilis japonica* is distributed widely from Europe, through Asia to Japan (from Kyushu to Hokkaido) and its neighbors. It has not been reported from Sakhalin (Miyabe and Miyake 1915, Sugawara 1940, Hiroe 1958, Pimenov 1987, Smirnov 2002, Barkalov and Taran 2004). Tatewaki (1957) reported its presence from Kunashir, but that specimen could not be found in SAPS in the present study. Pimenov (1987) also noticed its presence in the southern Kurils (Kunashir?: not clear in Fig. 88D), and Barkalov and Eremenko (2003) reported it as comparatively often from Shikotan and Kunashir.

### ***Comments on escaped or naturalized species***

*Carum carvi* L. is a temperate species of annual or biennial glabrous herbs with 0.3–1.0 m tall stems, native to Europe and Asia. This species has been widely cultivated and has escaped; it now has a discontinuous circumpolar distribution (Hultén and Fries 1986). In southern and middle Sakhalin and the Kurils, this species has been rarely reported as escaped plants (Pimenov 1987, Barkalov and Taran 2004). One specimen of the northern Kurils (Shumshu, probably a remained plant of cultivated origin) was found in SAPS.

*Conium maculatum* L. is an annual or biennial toxic herb with 1–2 m tall stems, native to the Mediterranean region and W. Asia, but it has been introduced as a medicinal herb in several regions.

It is now a widespread species found sporadically throughout the world. It was recorded from middle Sakhalin (Smirnov 2002, Barkalov and Taran 2004), but there had been no records before from Sakhalin and the Kurils (Pimenov 1987). It may be a somewhat newly introduced or escaped plant in middle Sakhalin.

*Daucus carota* L. is a European plant cultivated and escaped all over the world. It is a common naturalized plant often found along roadsides in Japan, including Hokkaido, but it has not been reported distinctly from Sakhalin and the Kurils as a naturalized plant until now. One herbarium specimen of *D. carota* cultivated in Sakhalin is preserved in SAPT (collected by Sugawara, no date), and Smirnov (2002) listed this species as a cultivated plant in Sakhalin. This species may become an escaped plant in Sakhalin in the near future.

*Foeniculum vulgare* Mill. is a glabrous and glaucous perennial herb with 1–2 m tall stems, native to the Mediterranean region, and the plants are cultivated and escaped in other regions of the world. The specimen from Sakhalin (Miyabe & Miyagi at Kusunnai [Il'inskiy] in 1906) is preserved in SAPS. Although this species was not listed as a cultivated or escaped plant in Sakhalin (Smirnov 2002), it could be one of the escaped plants found rarely in Sakhalin.

*Heracleum sosnowskyi* Manden. is a naturalized plant which has been recorded from southern Sakhalin (Pimenov 1987, Smirnov 2002, Barkalov and Taran 2004). Unfortunately no specimens are deposited in the main Japanese herbaria, so this species may have been introduced recently to Sakhalin.

### ***Comments on some dubious species***

*Bupleurum falcatum* L. var. *scorzonerifolium* (Willd.) Ledeb. was listed by Hiroe (1958) from Ohdomari in southern Sakhalin (Nakamura, TNS), and Kitagawa (1982) recognized the occurrence of *B. scorzonerifolium* Willd. in Sakhalin. I was unable to find this specimen in TNS.

*Ligusticum filisectum* (Nakai & Kitag.) M. Hiroe was listed by Hiroe (1958), citing the specimens from Mt. Totsuso, Motodomari of Sakhalin (Honda in TI and Kimura in TI), but the presence of this species in Sakhalin has never been supported by recent Russian literatures (Pimenov 1987; Smirnov 2002). I was unable to find these specimens in TI.

*Peucedanum multivittatum* Maxim. was listed by Hiroe (1958), citing one specimen (Endo, TNS) from Shumshu of the northern Kurils, but I ascertained that this is a misidentification of *Ligusticum scoticum*. Thus *P. multivittatum* is not native to the Kurils.

*Seseli libanotis* (L.) K.Koch subsp. *japonicum* (H.Boissieu) H.Hara was recorded from the southern Kurils (Ohba 1999). The presence of this species in the southern Kurils (Shikotan and Kunashir) was noticed in Tatewaki (1957), but it is attributed to a misidentification of *Peucedanum therebinthaceum*. *Seseli libanotis* is distributed in southwestern Hokkaido, so its occurrence would be unexpected in the southern Kurils.

## ***Distribution patterns between Sakhalin and the Kurils***

A wide range of the S-K indices (−1.00 to +1.00) in the Apiaceae is the same as that in the Ericaceae (Takahashi 2006). The extreme high positive S-K index (+1.00), which means the presence in Sakhalin but the absence in the Kurils, is found in six species in the Apiaceae (vs. six species in the Ericaceae). However, the extreme high negative S-K index (−1.00) is found in only one species, *Conioselinum filicinum*, in the Apicaceae (vs. seven species in the Ericaceae). This clear contrast between the Apiaceae and the Ericaceae indicates that the Ericaceae are a main dominant family in the Kuril Archipelago.

*Ligusticum scoticum* (S+K = 190) and *Tilingia ajanensis* (S+K = 171) represent the two most abundant species of the Apiaceae in these regions. These two species are characterized by somewhat wide species distribution ranges: the former is circumpolar and the latter ranges from E. Siberia to Alaska. The S-K indices of these two dominant species showed negative numerical values, −0.11 and −0.43, which means that the distribution is biased in favor of the Kurils, especially in *T. ajanensis*.

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## Appendix

A list of the herbarium specimens of the Apiaceae collected in Sakhalin and the Kurils. All specimens examined were deposited in the following Japanese herbaria; KYO, SAPS, SAPT, TI and TNS. Within each region; Sakhalin or the Kurils, the specimens are listed in order of locality; from north to south. Both Sakhalin and the Kuril Archipelago is divided into three geographic parts; the northern, middle and the southern (see Figs. 1 & 2). Within Sakhalin, the figure between angle brackets indicates the grid on a map (Fig. 1). Four quarters of each grid are recognized further when we can locate the collection site. Within the Kurils, the figure between angle brackets equivalents to the island (Fig. 2). Within each quarter of the grid in Sakhalin or each island in the Kurils, the specimens are listed in order of collection date. Specimens without accurate locality are listed last in each corresponding region or part.

As the spellings in the list follow those written on the herbarium labels, different spellings are sometimes listed for the same locality: e.g., Ohtomari, Ootomari, Ohdomari for Otomari [Korsakov].

### APIACEAE

#### 1. *Aegopodium alpestre* Ledeb. [Ezo-bōhū] <SAKHALIN>

NORTH. E coast of Peninsula Schmidt <05-upper l.>, Fukuda, T. 2046, 2001.08.14 (SAPS).

MIDDLE. N. Sakhalin, Hinan-ekisha–Aobaeki <36-lower l.>, Kudo, Y. & Tawewaki, M. 6173, 1922.07.30 (SAPS); Kitanayoshi <41-lower l.>, Ishii (Sugawara 16689), 1943.07.01 (SAPT); Shikka-gun, Mt. Horoto-dake <42-lower r.>, Sugawara, S., 1932.08.08 (KYO); Shikka-gun, Ikeda <44-upper r.>, Yoshimura, B. & Hara, M. 63, 1937.07.13 (TNS 234423); Shikka-shicho, between Yamahana and Ikeda <44-lower r.>, Yoshimura, B. & Hara, M., 1937.07.12 (SAPS); Shikka-shicho, Chirie-gun, Naruko <45-upper r.>, Tawewaki, M. & Takahashi, Y. 22856, 1936.06.26 (SAPS); Shikka-shicho, Chirie-gun, Chirikoro <45-upper r.>, Tawewaki, M. & Takahashi, Y. 22921, 1936.06.28 (SAPS); Shikka-shicho, Chirie-gun, Chirikoro <45-upper r.>, Tawewaki, M. & Takahashi, Y. 23036, 1936.06.30 (SAPS); Shikka Distr., Chirikoro <45-upper r.>, Yoshimura, B., 1936.08.06 (SAPS); Nayoshi-gun, Kitakozawa <46-upper l.>, Hemmi, M., 1942.08.16 (TNS 632052, TUS 108776); Uetonnai <48-lower l.>, Miyabe, K. & Miyagi, T., 1906.07.28 (SAPS); Kyoto Univ. Exp. Forest, Kusunokiyama <48-lower l.>, Shimono, T., 1928.07.20 (TNS 253520); Tomarikishi <48-lower l.>, Ban, S., no date (KYO); Kitashiretoko-hanto, Noto <51-lower l.>, Hoshino, Y. & Okada, S., 1933.07.12 (SAPS); Kitashiretoko-

hanto, Naihuto <51-lower l.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.30 (SAPS); Usutomanai <52-upper l.>, Miyabe, K. & Miyagi, T., 1906.08.14 (SAPS); W. Coast, Mt. Ushoro <52-upper r.>, Miyake, T., 1907.08.31 (SAPS); Minaminiitōi <54-upper r. ?>, Hara, H. (C1245), 1931.08.04 (TI); Kitashiretoko-hanto, Kitashiretoko-misaki <55-lower r.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.20 (SAPS); Shikka, Kitashiretoko-misaki <55-lower r.>, Sugawara, S. 16685, 1935.07.26 (SAPT); Shikka, Kitashiretoko-misaki <55-lower r.>, Sugawara, S. 2702, 27198, 1935.07.26 (SAPS).

SOUTH. E. Coast, Makunkotan <57-lower l.>, Miyake, T., 1906.09.15 (SAPS); Mt. Tosso, 8-gome <57-lower l.>, Koidzumi, H. 20940, 1929.07.29 (TNS 920142); Shiritori, Ishiyama <57-upper r.>, Hara, H. (C746), 1931.08.04 (TI); S. Saghal., Kashipo <57-upper r.>, Takee, G., Abumiya, H. & Hoshino, Y., 1932.07.18 (SAPS); W. Coast, Kusunnai <58-upper r.>, Miyake, T., 1906.07.07 (SAPS); Odasamu Univ. Forest <59-lower l.>, Suematsu, S., 1929.07.25 (TI- 2 sheets); Toyoharashicho, Aikawa Tokyo Univ. Forest <61-upper r.>, Honda, M. & Kimura, Y., 1940.08.11 (TI); Aihama-mura <61-upper r.>, Imazeki, R., 1941.07.14 (TNS 87750); Toyohara, Fukakusa <61-lower r.>, Sugawara, S. 173, 1921.07.10 (SAPS); Fukakusa <61-lower r.>, Sugawara, S. 34, 1924.08. (SAPS); Sakaehama <62-upper l.>, Sugawara, S. 16686, 1930.08.20 (SAPT); Sakaehama <62-upper l.>, Ohwi, J., 1932.07.21 (KYO); Ochiai <62-lower l.>, Sugawara, S. 16687, 1930.07.01 (SAPT); Kurokawa <62-lower l.>, Hara, H. (C1086), 1931.07.31 (TI); 20km E of Sokol town, around the mouth of Bakhura River <62-lower r.>, Takahashi, H. 29142, 2001.07.19 (SAPS); Takinosawa <64-upper r.>, Miyake, T., 1906.06.29 (SAPS); Sekiguchitoge <64-upper r.>, Miyake, T., 1906.06.30 (SAPS); Takinosawa <64-upper r.>, Faurie, U. 377, 1908.07.24 (KYO); Vladimirohuka <65-upper l.>, Miyake, T., 1907.07.27 (SAPS); Near Toyohara-machi <65-upper l.>, Momose, G. (Koidzumi, H. 83641), 1927 (TNS 920027); Sussuja <65-upper l.>, Sugawara, S., 1928.07 (KYO); Mt. Susuya <65-upper r.>, Hara, H. (C2592), 1928.08.13 (TI); Mt. Susuya <65-upper r.>, Saito, S., 1929.07.26 (TI); Toyohara-gun, Mt. Susuyadake <65-upper r.>, Sase, H., 1937.09.18 (SAPS); Approx. 8km E of Yuzhno-Sakhalinsk <65-upper r.>, Takahashi, H. 29255, 2001.07.22 (SAPS); Approx. 8km E of Yuzhno-Sakhalinsk <65-upper r.>, Takahashi, H. 29238, 2001.07.22 (SAPS); Mt. Sussujazan <65-upper r.>, Takahashi, S., no date (KYO); Tonnaicha-sando <65-lower r.>, Miyake, T., 1906.10.09 (SAPS); Tonnai-gun, Kamikiminai <65-lower r.>, Sase, H., 1940.08.03 (SAPS- 2 sheets); Mt. Kiyokawa <65-lower r. ?>, Koidzumi, H. 20556, 1927.07.26 (TNS 920074); Airopu <67-lower l.>, Miyabe, K. & Miyagi, T.,

1906.07.31 (SAPS); About 8km N of Shebunino <68-upper l.>, Takahashi, H., Kawahara, T., Kitamura, K. & Taran, A. 33746, 2007.07.10 (SAPS); W. Coast, South-Nayashi <68-lower l.>, Miyake, T., 1907.06.14 (SAPS); Chipisani <71-upper l.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.15 (SAPS); E. Coast, Cheppopo <72-lower l.>, Miyake, T., 1908.07.08 (SAPS); Mt. Omanbetsu <72-lower l.>, Miyake, T., 1908.07.15 (SAPS); Cap. Notoro <73-lower l.>, Miyabe, K. & Miyagi, T., 1906.07.19 (SAPS); Todomoshiri, Mt. Dainan <73-lower l.>, Miyake, T., 1906.07.20 (SAPS); Todomoshiri, Dainanwan <73-lower l.>, Miyake, T., 1906.07.23 (SAPS); Todomoshiri, Shimizutani <73-lower l.>, Miyake, T., 1906.07.23 (SAPS); Todomoshiri, Tomarizawa <73-lower l.>, Miyake, T., 1906.07.23 (SAPS); Isl. Kaibato <73-lower l.>, Komat, S., 1915.08.12 (TI); Isl. Kaibato, Ganpizaka <73-lower l.>, Kimoto, Murayama & Takee, 1931.07.18 (SAPS).

#### <THE KURILS>

SOUTH. ITURUP <20>. Furebetsu, Miyabe, K., 1884.07.28 (SAPS); Arimoi, Miyabe, K., 1884.07.29 (SAPS); Rubetsu-mura, Yokoyama, S., 1893.07.09 (SAPS); Shana-Bettobi, Kondo, K. (1933), 1927.07.13 (TI, TNS 688055); Bettobi-Shana, Saito, S., 1928.08.18 (TI- 2 sheets); Shana, Yoshimura, B., 1937.08.08 (SAPS); Shana-Rubetsu, Yoshimura, B., 1939.07.31 (SAPS); Between Arimoe and Rubetsu, Minakawa, N., 1997.07.29 (SAPS). KUNASHIR <21>. Seseki, Tatewaki, M. 3080, 1923.07.20 (SAPS, SAPT); Furukamappu, Matsumura, Y., 1930.07.20 (KYO); Furukamappu lake, Matsumura, Y., 1930.07.22 (KYO); Mt. Harui-dake[?], Koriba, M. & Yoshii, R., 1933.07.29 (KYO); No locality, collector unknown, 1935 (KYO). SHIKOTAN <22>. No locality, Miyabe, K., 1884.07.27 (SAPS); No locality, Kawakami, T., 1898.08 (TI); Between Matsugahama and Poropet, Takeda, H., 1909.07.27 (SAPS); Masuba, Miyabe, Ken. & Tanaka, G., 1910.08.14 (SAPS- 2 sheets); No locality, Abe, A., 1924.07.17 (TNS 429845, 429844); Shakotan, Kondo, K., 1929.08.04 (TI- 4 sheets); Mt. Shakotan, Kondo, K., 1929.08.06 (TI); Notoro, Ohwi, J., 1931.08.08 (KYO); Umanose, Ohwi, J., 1931.08.30 (KYO); Inemoshiri, Tatewaki, M. 20576, 1934.06.20 (SAPS); Shakotan, Tatewaki, M. 20766, 1934.06.28 (SAPS). HABOMAI <23>. Isl. Yuru, Kondo, K., 1929.08.24 (TI).

#### 2. *Angelica edulis* Miyabe ex Y.Yabe [Ama-nyū]

##### <SAKHALIN>

SOUTH. Toyohara <65-upper l.>, Muramatsu, S., 1923.07 (TI).

#### 3. *Angelica genuflexa* Nutt. ex Torr. et A.Gray [Ōbasenkyū]

##### <SAKHALIN>

NORTH. N. Sakhalin, side of Piiri River <04-lower r.>, Kudo, Y. & Ishida, B. 7073, 1923.08.24 (SAPS); 1km N of Val <19-lower l.>, Takahashi, H. 31132, 2003.07.27 (SAPS).

MIDDLE. N. Sakhalin, Ako <28-lower l.>, Okada,

1923.08.19 (TI); Pilewo <36-lower l.>, Miyabe, K. & Miyagi, T., 1906.08.13 (SAPS); Golojikoff <37-lower r.>, Miyake, T., 1906.08.26 (SAPS); Hamdasa <37-lower r.>, Miyake, T., 1906.08.27 (SAPS); About 30km E of Pervomayskoye <39-lower r.>, Fujii, N. F01309, 2002.08.11 (SAPS); Asase <40-lower l.>, Sugawara, S. 16735, 1935.08.02 (SAPT); Nayashi <41-lower l.>, Miyake, T. & Miyagi, T., 1906.08.12 (SAPS); Fūi <43-lower l.>, Miyake, T., 1906.08.22 (SAPS); Shikka Distr., Naruko-Chirikoro <45-upper r.>, Yoshimura, B., 1936.08.16 (SAPS); Shikka Distr., Chirikoro <45-upper r.>, Yoshimura, B., 1936.08.18 (SAPS); Nayoshi-gun, Kitakozawa <46-upper l.>, Hemmi, M., 1941.09.15 (TNS 631316, 631315); Nayoshi-gun, Kitakozawa <46-upper l.>, Hemmi, M., 1942.08.16 (TNS 631318, 631317, 108777); E. Coast, Nayoro <48-lower l.>, Miyake, T., 1906.09.06 (SAPS); Kyoto Univ. Exp. Forest-Kaminairo <48-lower l.>, Kobayashi, Y., 1928.08.01 (TNS 253588); Tomarikishi <48-lower l.>, Koidzumi, G., 1930.08.23 (KYO); Tobani <48-upper r.>, Miyake, T., 1906.08.20 (SAPS); Dawait <49-upper l.>, Miyake, T., 1906.08.15 (SAPS); W. Coast, Naikotoru <52-upper l.>, Miyake, T., 1907.08.26 (SAPS); E. Coast, Shirutoro <54-lower l.>, Miyake, T., 1906.09.13 (SAPS); Kitashiretokohanto, Yoman-Rosoku-iwa <55-upper r.>, Okada, S. & Sugiyama, S., 1933.07.21 (SAPS).

SOUTH. E. Coast, Makunkotan <57-lower l.>, Miyake, T., 1906.09.15 (SAPS); Shiraishizawa-Nupuripo <57-lower l.>, Saito, S., 1929.08.02 (TI); Nupuripo-Shiraishizawa <57-lower l.>, Saito, S. (3628), 1929.08.04 (TI, TNS 755198); E. Coast, Kashipo <57-upper r.>, Miyake, T., 1906.09.14 (SAPS); Kashiho <57-upper r.>, Kitamura, S., 1930.08.25 (KYO); Kasipo, Syokuminti <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.08.08 (SAPS); Buriu <57-lower r.>, Miyake, T., 1906.08.24 (SAPS); E. Coast, Manue <59-upper l.>, Miyake, T., 1906.09.22 (SAPS); Approx. 6km W of Sokol town <61-lower r.>, Takahashi, H. 29179, 2001.07.20 (SAPS); Dobuki <62-upper l.>, Nakahara, G., 1906.08 (TI); Sakaihama <62-upper l.>, Sawada, T., 1923.08.24 (TI); Galkinovlaskoe <62-lower l.>, Miyake, T., 1906.07.11 (SAPS); Maoka <63-upper r.>, Sugawara, S. 16730, 1934.07 (SAPT); Oomagari <64-upper r.>, Miyake, T., 1906.06.30 (SAPS); Sekiguchitoge <64-upper r.>, Miyake, T., 1906.06.30 (SAPS); Toyohara <65-upper l.>, Sawada, T., 1923.08.06 (TI- 2 sheets); Toyohara <65-upper l.>, Koidzumi, G., 1930.08.07 (KYO); Toyohara-gun, Toyokita-mura, Konuma <65-upper l.>, Sase, H., 1937, 08.25 (SAPS- 3 sheets); Kaizuka <65-lower l.>, Sugawara, S. 16700, 1932.08.28 (SAPT); Tonnai-gun, Kamikiminai, Honryu <65-lower r.>, Sase, H., 1940.08.12 (SAPS- 2 sheets); Korsakof <70-upper r.>, Faurie, U. 393, 1908.08 (KYO); Korsakof <70-upper r.>, Faurie, U. 392, 1908.09 (KYO); Korsakof <70-upper r.>, Faurie, U. 391, 1908.09 (KYO- 2 sheets); Ohdomari <70-upper r.>, Koidzumi, H. 82562, 1924.08 (TNS 910530); Ootomari <70-upper r.>, Sugawara, S. 16734, 1937.08.30 (SAPT); Todomoshiri, Tomarizawa

<73-lower l.>, Miyake, T., 1906.07.23 (SAPS).

[No locality] Faurie, U., 1907.10 (KYO).

<THE KURILS>

NORTH. SHUMSHU <2>. S of Pochtareva Cape, Takahashi, H. 23344, 1997.08.08 (SAPS); Babushkina Bay, Takahashi, H. 23535, 1997.08.10 (SAPS). PARAMUSHIR <3>. Kamogawazaki, Kudo, Y. 5198, 1920.07.12 (SAPS); Murakamiwan, Kudo, Y. 5454, 1920.07.23 (SAPS); Shirakawa, Kudo, Y. 5600, 1920.07.30 (SAPS); Nishikawa, Ohwi, J. & Yoshii, R. 6172, 1934.08.10 (KYO); 5km S of Severo-Kuril'sk, Takahashi, H. 20819, 1996.08.01 (SAPS- 2 sheets); 5km S of Severo-Kuril'sk, Takahashi, H. 20761, 1996.08.01 (SAPS); E side of Vasil'yeva Bay, Takahashi, H. 20939, 1996.08.03 (SAPS); Vasil'yeva Cape, Takahashi, H. 23863, 1997.08.16 (SAPS); Tukharka Bay, Takahashi, H. 23923, 1997.08.17 (SAPS).

MIDDLE. URUP <19>. Kobune, Tatewaki, M. 9864, 1927.08.26 (SAPS); Tokotan, lake-side, Tatewaki, M. 9727, 1927.08.28 (SAPS); Swamps along the Yoroigawa, Tatewaki, M. 9943, 1927.09.06 (SAPS); Kobune, Tatewaki, M. & Takahashi, K. 15988, 1929.09.18 (SAPS); Otkrytyy Bay, Takahashi, H. 18510, 1995.08.04 (SAPS- 2 sheets); Novokuril'skaya inlet, Takahashi, H. 18811, 1995.08.08 (SAPS); Smuglyy Bay, Takahashi, H. 19912, 1995.08.24 (SAPS); Barhatnyy Bay, Takahashi, H. 20101, 1995.08.28 (SAPS).

SOUTH. ITURUP <20>. Naibo, Kawakami, T., 1898.09 (TI); Bettobi, Saito, S., 1928.08.17 (TI); Rakkibetsu, Koidzumi, H. 25777, 1930.08.19 (TNS 910529); Shana-Bettobi, Yoshimura, B., 1937.08.13 (SAPS); Shibetoro-Moyoro, Yoshimura, B. & Yokoyama, H., 1938.08.02 (SAPS); Shana, Yoshimura, B., 1939.08.20 (SAPS); Near Kuril'sk, Ilyshko, M. & Zhuravlev, Y., 1995.08.03 (SAPS). KUNASHIR <21>. Zenbekotan, Tatewaki, M. 25641, 1936.08.22 (SAPS). SHIKOTAN <22>. Shakotan, Tatewaki, M. 9587, 1927.08.22 (SAPS); Masuba-Notoro, Kondo, K., 1929.09.03 (TI); Yokonemoshiri, Kondo, K., 1929.09.06 (TI); Shakotan, Ono, S.T., 1930.08.24 (SAPS, SAPT); Shakotanzaki, Ohwi, J., 1931.09.03 (KYO); Shakotan, Tatewaki, M. 20870, 1934.07.03 (SAPS); No locality, collector unknown, 1937.08 (TNS 267010).

**4. *Angelica gmelinii* (DC.) Pimenov [Ezo-no-shishiudo] <SAKHALIN>**

NORTH. Peninsula Schmidt, Gulf of Pomr' <07-lower l.>, Fukuda, T. 1915, 2001.08.10 (SAPS); N. Sakhalin, Chaio <19-lower l.>, Kusano, Y. (Koidzumi, H. 86409), 1921.07 (TNS).

MIDDLE. E. Coast, Kokkyo, Asase <40-lower l.>, Hoshino, Y. & Sugiyama, S., 1933.08.11 (SAPS); Nayoshi-gun, Nayoshi <41-lower l.>, Hemmi, M., 1943.07.04 (TNS 631319); Shikka-shicho, Nimenjo-Yamahana <44-lower l.>, Yoshimura, B. & Hara, M., 1937.07.11 (SAPS); E. Coast, Nayoro <48-lower l.>, Miyabe, K. & Miyagi, T., 1906.07.28 (SAPS); Shisuka <48-upper r.>, Namikawa, I., 1914.08.20

(SAPS); Shikka <48-upper r.>, Otani, H. & Imai, Y., 1930.07.19 (SAPS); Shikka <48-upper r.>, Tobita, H., 1935.07.23 (KYO); Shikka-cho, Otasunomori <48-upper r.>, Imazeki, R., 1941.07.16 (TNS 85021); Shikka-shicho, near Taraika <49-upper r.>, Honda, M. & Kimura, Y., 1940.08.16 (TI); Jimutaki <50-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.24 (SAPS); Kitashiretoko-hanto, Notq <51-lower l.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.12 (SAPS); Kitashiretoko-hanto, Chirie <51-lower r.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.15 (SAPS); Kitashiretoko-hanto, Mt. Hokke-yama <51-lower r.>, Hoshino, Y., 1933.07.22 (SAPS); Kitashiretoko-hanto, Kitafunakoshi <51-lower r.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.23 (SAPS); Usutomanai <52-upper l.>, Miyabe, K. & Miyagi, T., 1906.08.11 (SAPS); Mt. Niitoyama <54-upper l.>, Sugawara, S. 16874, 1934.08 (SAPT); Minaminiitoyama <54-upper r.?>, Hara, H. (C1246), 1931.08.04 (TI).

SOUTH. Mt. Tosso <57-lower l.>, Sugawara, S. 16873, 1927.08.01 (SAPT); Mt. Tosso <57-lower l.>, Koidzumi, H. 20944, 1929.07.30 (TNS 911665); Mt. Tso-zan <57-lower l.>, Hara, H. (C882), 1931.08.05 (TI); Motodomari-shicho, Mt. Tosso-zan <57-lower l.>, Honda, M. & Kimura, Y., 1940.08.12 (TI); About 5km SW of Vostochnyy, Pugacheva <57-lower l.>, Takahashi, H. 31095, 2003.07.25 (SAPS); Mt. Kashipo <57-upper r.>, Hiratsuka, N., 1928.08.07 (SAPS); Kenshindai at Kashipo <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.07.16 (SAPS); Seashore at Kashipo <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.07.24 (SAPS); W. Coast, Kushun'nai <58-upper r.>, Sase, H., 1937.09.10 (SAPS); E. Coast, Dubuki <62-upper l.>, Miyake, T., 1906.07.10 (SAPS); Dubuki <62-upper l.>, Miyabe, K. & Miyagi, T., 1906.07.22 (SAPS); Sakaehama <62-upper l.>, Sugawara, S. 10, 1927.07.10 (SAPS); Dobukky near Dolinsk <62-upper l.>, Saito, S., 1929.07.28 (TI- 2 sheets); Sakaehama <62-upper l.>, Koidzumi, G., 1930.08.13 (KYO); Sakaehama <62-upper l.>, Hara, H. (C955), 1931.07.31 (TI); Sakaehama <62-upper l.>, Hara, H. (C989a & b), 1931.07.31 (TI- 2 sheets); E. Coast, mouth of River Naiba <62-upper l.>, Fukuda, T. 1201, 2001.07.23 (SAPS); 20km E of Sokol town, mouth of Bakhura River <62-lower r.>, Takahashi, H. 29092, 2001.07.19 (SAPS- 2 sheets); W. Coast, Mauka <63-upper r.>, Miyake, T., 1906.07.03 (SAPS); Near Maoka <63-upper r.>, Rika-kenkyusyo, 1926.08 (TNS 013989); Mitsurihoka <65-lower l.>, Miyake, T., 1906.07.13 (SAPS); Perwayapachi <65-lower l.>, Nakahara, G., 1906.08 (TI); Torepachi [Tret'yapad'?] <65-lower l.>, Nakahara, G., 1906.08 (TI- 2 sheets); Kaizuka <65-lower l.>, Momose, G. (Koidzumi, H. 83646), 1927 (TNS 920774); Shinba <65-lower l.>, Koidzumi, G., 1930.08.08 (KYO- 4 sheets); Mt. Susuya <65-upper r.>, Sugawara, S. 16872, 1940.07.25 (SAPT); 30km SE of Yuzhno-

Sakhalinsk, S of Okhotskoye <66-lower l.>, Takahashi, H. 27900, 2000.07.19 (SAPS); Airopu <67-lower l.>, Miyabe, K. & Miyagi, T., 1906.07.31 (SAPS); Rutakagun, Notoro-mura, Dorokawa <69-lower l.>, Koidzumi, G., 1940.09.03 (KYO); Korssakoff <70-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.12 (SAPS); Mereya <70-upper r.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.14 (SAPS); Mereya <70-upper r.>, Faurie, U. 390, 1908.09 (KYO- 2 sheets); Korssakoff <70-upper r.>, Faurie, U. 390, 1908.09 (KYO); 10km E of Korsakov, Prigordnoye <70-upper r.>, Takahashi, H. 30601, 2002.08.15 (SAPS); Cap. Notoro <73-lower l.>, Miyabe, K. & Miyagi, T., 1906.07.19 (SAPS); Todomoshiri, Kamoshima <73-lower l.>, Miyake, T., 1906.07.23 (SAPS); Isl. Kaibato, Kita-kotan <73-lower l.>, Kimoto, Murayama & Takee, 1931.08.05 (SAPS); C. Suryuda <74-upper l.>, Miyabe, K. & Miyagi, T., 1906.08.01 (SAPS).

[No locality] Faurie, U., no date (KYO- 2 sheets).

#### <THE KURILS>

NORTH. ATLASOVA <01>. Minamiura, Ito, S. & Komori, G., 1926.07.04 (SAPS); Minamiura, Ito, S. & Komori, G., 1926.07.18 (SAPS); Minamiura, Ohwi, J. & Yoshii, R. 5893, 1934.07.31 (KYO); Alaidskaya Bay, Takahashi, H. 23673, 1997.08.12 (SAPS). SHUMSHU <02>. No locality, Gunji, 1898 (SAPS); No locality, Yendo, K., 1903.08 (TI); S of Pochtareva Cape, Takahashi, H. 23231, 1997.08.08 (SAPS). PARAMUSHIR <03>. NE coast, Yokoyama, S., 1893.09.09 (SAPS); Murakami-wan, Kitahara, 1916.07 (TI); Murakami-wan, Kudo, Y. 4956, 1920.07.04 (SAPS); Nishikawa-Atenkeshi, Kudo, Y. 5231, 1920.07.13 (SAPS); Hiratazaki, Kudo, Y. 5394, 1920.07.21 (SAPS); Western coast, collector unknown, 1931 (TI); Kujira-hama, Koidzumi, H. 36939, 1932.07.21 (TNS 919890); Murakami-wan, Koidzumi, H. 40159, 1932.08.20 (TNS 920099); 5km S of Severo-Kuril'sk, Takahashi, H. 20718, 1996.08.01 (SAPS- 2 sheets); E side of Vasil'yeva Bay, Takahashi, H. 20921, 1996.08.03 (SAPS- 2 sheets); E side of Vasil'yeva Bay; Takahashi, H. 21062, 1996.08.03 (SAPS); S of Savushkina Cape, Takahashi, H. 23019, 1997.08.04 (SAPS- 2 sheets). ANTISIFEROVA <04>. NW of island, Takahashi, H. 23794, 1997.08.15 (SAPS).

MIDDLE. ONEKOTAN <06>. Nemo, Tatewaki, M. & Tokunaga, Y. 12594, 1928.08.08 (SAPS); Nemo Bay, Takahashi, H. 21182, 1996.08.04 (SAPS); SW of island, Takahashi, H. 21357, 1996.08.05 (SAPS). KHARIMKOTAN <07>. Inland from Severgina Bay, Takahashi, H. 21473, 1996.08.08 (SAPS). CHIRINKOTAN <08>. E of Cape Ptichy, Takahashi, H. 21586, 1996.08.10 (SAPS). EKARMA <09>. No locality, Tatewaki, M. 11355, 1928.08.11 (SAPS); NW of island, Takahashi, H. 21642, 1996.08.10 (SAPS). SHIASHKOTAN <10>. No locality, Ishikawa, T., 1894.06.23 (SAPS). RAIKOKE <11>. E side of island, Takahashi, H. 21867, 1996.08.13 (SAPS- 2 sheets). RASSHUA <13>. Near Yotsuiwa-hama, Tatewaki, M. & Tokunaga, Y. 12474, 1928.08.06 (SAPS); Sonraku-wan, Tatewaki, M. & Takahashi

12361, 1929.08.04 (SAPS); Sonraku-wan, Tatewaki, M. & Takahashi 15050, 1929.08.04 (SAPS); S of Yoriki-hama, Takahashi, H. 19173, 1995.08.12 (SAPS). USHISHIR-RYPONKICHA <14a>. No locality, Tatewaki, M. & Tokunaga, Y. 12568, 1928.08.11 (SAPS). USHISHIR-YANKICHA <14b>. No locality, Tatewaki, M. & Tokunaga, Y. 12497, 1928.09.01 (SAPS); Onsen-wan, Tatewaki, M. & Takahashi, K. 15843, 1929.09.10 (SAPS); Kraternaya Bay, Takahashi, H. 19280, 1995.08.14 (SAPS); Mountain ridge, Takahashi, H. 22892, 1997.08.01 (SAPS- 2 sheets). KETOI <15>. Kodakigawa, Tatewaki, M. & Takahashi, K. 15256, 1929.08.15 (SAPS). BROUTONA <17>. Nodostupnyy Cape, Ohara, M., 1995.08.23 (SAPS). CHIRPOI <18a>. Peschanaya Bay, Takahashi, H. 19793, 1995.08.23 (SAPS). BRAT CHIRPOEV <18b>. W of Samotuga Cape, Takahashi, H. 24088, 1997.08.20 (SAPS); W of Samotuga Cape, Takahashi, H. 24093, 1997.08.20 (SAPS); Uglovaya Bay, Takahashi, H. 28433, 2000.08.04 (SAPS). URUP <19>. Iwayadomari, Uchida, K., 1891.06.17 (SAPS- 3 sheets); Anama-Yoshino-hama, Uchida, K., 1891.06.17 (SAPS); Iwanagawa-Anama, Uchida, K., 1891.06.18 (SAPS); Iema, Kodama, 1893.05 (SAPS); Tokotan, Lake-side, Tatewaki, M. 10016, 1927.08.28 (SAPS); Near Tokotan, Miyabe, T. 9684, 1927.08.29 (SAPS); Otkrytyy Bay, Takahashi, H. 18415, 1995.08.04 (SAPS- 2 sheets); Otkrytyy Bay, Takahashi, H. 18467, 1995.08.04 (SAPS- 2 sheets); Otkrytyy Bay, Takahashi, H. 18595, 1995.08.05 (SAPS); Inland from Ukromnaya Bay, Takahashi, H. 22127, 1996.08.20 (SAPS); Inland from Ukromnaya Bay, Takahashi, H. 22103, 1996.08.20 (SAPS).

SOUTH. ITURUP <20>. Toro-Naibo, Kambe, M., 1890.08 (SAPS); Rubetsu-mura, Yokoyama, S., 1893.07.06 (SAPS); Shana, Koda, 1895 (SAPS); Mt. Chirippu, Kawakami, T., 1898.08 (TI); Mt. Moyoro, Miyabe, Ken. & Tanaka, Y., 1910.07.17 (SAPS- 2 sheets); Shamanbe, Kondo, K. 2272, 1927.07.14-15 (TI, TNS 716936); Mt. Atoiya, Kondo, K., 1927.07.21 (TI); Shibetoru, Saito, S., 1929.07.28 (TI); Iriebushi, Koidzumi, H. 24343, 1930.08.03 (TNS 920071); Rakko-iwa, Koidzumi, H. 24563, 1930.08.04 (TNS 920138); Kamuikotan, Koriba, M. & Yoshii, R., 1933.08.06 (KYO); Shana, Yoshimura, B., 1937.08.10 (SAPS); Shana-Rubetsu, Yoshimura, B., 1939.07.31 (SAPS); Mouth of Naibo River-Iribubushi, Azuma, T. & al. 3288, 2002.06.19 (SAPT). KUNASHIR <21>. Seseki, Tatewaki, M. 3081, 1923.07.20 (SAPS); Seseki, Tatewaki, M. 3103, 1923.07.20 (SAPS); Chachanupuri, Kondo, K. 2389, 1929.07.20 (TI, TNS 716845); Shiranuka-Chinomichi, Nagai, M. & Shimamura, M., 1929.08.05 (SAPS); Rebun'iso, Koidzumi, H. 21986, 1929.08.14 (TNS 919861); Furukamappu, Matsumura, Y., 1930.07.20 (KYO). SHIKOTAN <22>. Kagenoma, Ohwi, J., 1931.08.02 (KYO); Notoro, Ohwi, J., 1931.08.11 (KYO); Umanose, Ohwi, J., 1931.08.30 (KYO); Matakotan-yama, Tatewaki, M. 20841, 1934.06.30 (SAPS). HABOMAI <23>. Isl. Taraku, Kondo, K., 1929.08.24 (TI).

**5. *Angelica maximowiczii*** (F.Schmidt) Benth. ex Maxim. [Hosoba-senkyū]  
<SAKHALIN>

NORTH. 5km S of Val <19-lower l.>, Takahashi, H. 31125, 2003.07.27 (SAPS); N. Sakhal., Pupni <26-lower l.>, Kudo, Y. & Tatewaki, M. 6356, 1922.08.08 (SAPS).

MIDDLE. Alexandrovskiy <28-lower l.>, Takeo, S., 1905.09 (SAPS); N. Sakhal., Kami-Almdan <28-lower r.>, Kudo, Y. & Tatewaki, M. 6653, 1922.08.24 (SAPS); Luekoff-Adtyimi <33-upper r.>, Kudo, Y. & Tatewaki, M. 6313, 1922.08.06 (SAPS); About 10km E of Palevo <33-upper r.>, Takahashi, H. 30437, 2002.08.09 (SAPS); S. Sakhalin, Anbetsu <36-lower l.>, Tokunaga, Y. & Kawai, K., 1929.09.02 (SAPS); Anbetsu <36-lower l.>, Sugawara, S. 16760, 1933.08.13 (SAPT); Vicinity of R. Jobboroit <37-43>, Miyake, T., 1906.08.30 (SAPS); Hayabusayama <38-lower l.>, Miyake, T., 1906.08.28 (SAPS); Higashiyama <38-lower l.>, Miyake, T., 1906.08.28 (SAPS); E. Coast, Kokkyo, Asase <40-lower l.>, Hoshino, Y. & Sugiyama, S., 1933.08.11 (SAPS); Keton <42-upper r.>, Ohwi, J., 1932.08.10 (KYO); Shikka Distr., Ikeda Takaya-jimusho <44-upper r.>, Yoshimura, B. & Hara, M., 1937.07.13 (SAPS); Shikka-shicho, Chirikoro <45-upper r.>, Hoshino, Y. & Sugiyama, S., 1933.08.08 (SAPS); Shikka Distr., Chirikoro <45-upper r.>, Yoshimura, B., 1936.08.06 (SAPS); Shikka Distr., Naruko-Chirikoro <45-upper r.>, Yoshimura, B., 1936.08.16 (SAPS); Shikka, Aba <48-upper l.?,> Otani, H. & Imai, Y., 1930.07.31 (SAPS); E. Coast, Nayoro <48-lower l.>, Miyake, T., 1906.09.06 (SAPS); Tomarikishi <48-lower l.>, Koidzumi, G., 1930.08.23 (KYO); Rammoteiuri <48-upper r.>, Miyake, T., 1906.08.15 (SAPS); Amiba <48-upper r.>, Koidzumi, G., 1930.08.18 (KYO); Poronaysk-Leonidovo <48-upper r.>, Takahashi, H. 30542, 2002.08.13 (SAPS); Kitashiretoko-hanto, Noto <51-lower l.>, Hoshino, Y. & Sugiyama, S., 1933.08.02 (SAPS); Shiritoru <54-lower l.>, Sugawara, S. 16754, 1927.08.03 (SAPT); Mt. Shiretori <54-lower l.>, Hiratsuka, N., 1928.08.05 (SAPS).

SOUTH. E. Coast, Makunkotan <57-lower l.>, Miyake, T., 1906.09.15 (SAPS); E. Coast, Mt. Tosso <57-lower l.>, Hiratsuka, N., Iwadare, S. & Nagai, M., 1927.07.23 (SAPS); Mt. Tosso <57-lower l.>, Sugawara, S. 16756, 16757, 1928.08.23 (SAPT-2 sheets); Noboriho <57-lower l.>, Sugawara, S. 16758, 1928.08.24 (SAPT); Shiraishizawa-Nupuripo <57-lower l.>, Saito, S. 340, 1929.08.02 (TI-3 sheets); Motodomari-shicho, Mt. Tosso <57-lower l.>, Honda, M. & Kimura, Y., 1940.08.12 (TI); Motodomari (Vostochnyi) <57-upper r.>, Saito, S. 3712, 1929.08.01 (TI-2 sheets); Shiritoru, Ishiyama <57-upper r.>, Hara, H. (C747), 1931.08.04 (TI); S. Sakhalin, Horotoike at Kashipo <57-upper r.>, Abumiya, H. & Takee, G., 1932.08.10 (SAPS); Mt. Kashipo-dake <57-upper r.>, Sugawara, S. 16753, 1934.08.02 (SAPT); W. Coast, Kusunnai <58-upper r.>, Miyake, T., 1906.07.07 (SAPS); Kusunnai <58-upper r.>, Miyabe, K. & Miyagi,

T., 1906.08.09 (SAPS); E. Coast, Kusunnai <58-upper r.>, Miyake, T., 1906.09.21 (SAPS); E. Coast, Mt. Chikaporonai <59-upper l.>, Miyake, T., 1907.08.12 (SAPS); Manui-sando <59-upper l.>, Sugawara, S. 27, 1925.08.16 (SAPS); W. Coast, Notasan <60-upper l.>, Miyake, T., 1907.06.29 (SAPS); W. Coast, Tokotan <60-lower l.>, Miyake, T., 1907.06.22 (SAPS).

**6. *Angelica sachalinensis*** Maxim. [Ezo-no-yoroigusa]  
<SAKHALIN>

SOUTH. Sakaehama <62-upper l.>, Ex herb. Dr. J. Ito, no date (TNS 120265); Sakaehama <62-upper l.>, Ex herb. Dr. J. Ito, no date (TNS 120242); Galkinovlaskoe <62-lower l.>, Miyake, T., 1906.07.11 (SAPS); Kurokawa <62-lower l.>, Sugawara, S. 16697, 1925.08.20 (SAPT); Kotani <62-lower l.>, Sugawara, S. 16696, 1935.08.25 (SAPT); E. Coast, Rore <62-upper r.>, Miyake, T., 1906.09.27 (SAPS); 20km SE of Dolinsk <62-lower r.>, Takahashi, H. 30112, 2002.07.31 (SAPS); Toyohara <65-upper l.>, Koidzumi, G., 1930.08.06 (KYO-5 sheets); Toyohara <65-upper l.>, Sugawara, S. 16699, 1937.08.05 (SAPT); Toyohara-shicho, near Toyohara <65-upper l.>, Honda, M. & Kimura, Y., 1940.08.19 (TI-2 sheets); Mt. Susuya <65-upper r.>, Miyake, T., 1907.07.27 (SAPS); Approx. 8km E of Yuzhno-Sakhalinsk <65-upper r.>, Takahashi, H. 29250, 2001.07.22 (SAPS-3 sheets); Tonnaicha-sando <65-upper r.>, Miyake, T., 1906.10.08 (SAPS); Tonnaicha-sando <65-lower r.>, Miyake, T., 1906.10.09 (SAPS); Tonnai-gun, Kamikiminai <65-lower r.>, Sase, H., 1940.08.24 (SAPS); E. Coast, Tonnaicha <66-lower l.>, Miyake, T., 1908.06.28 (SAPS); Mereya <70-upper r.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.14 (SAPS-2 sheets); Korsakoff <70-upper r.>, Miyabe, K. & Miyagi, T., 1906.08.04 (SAPS-2 sheets); Korsakof <70-upper r.>, Faurie, U. 394, 1908.08 (KYO); Korsakof <70-upper r.>, Faurie, U. 390, 1908.09 (SAPS); Korsakof <70-upper r.>, Faurie, U. 395, 1908.09 (KYO); Ohtomari <70-upper r.>, Hara, H. (163, 163d), 1928.08.12 (TI-2 sheets).

<KURILS>

SOUTH. ITURUP <20>. Onnebetsu, Ishikawa, T., 1890.08.07 (SAPS); Shana, Yoshimura, B., 1937.08.07 (SAPS-2 sheets). KUNASHIR <21>. Mt. Tomari, Tatewaki, M. 25504, 1936.08.20 (SAPS). SHIKOTAN <22>. Shakotan Harbor, Saito, S., 1925.09.01 (TI); No locality, Kondo, K. 6034, 1927.08.11 (TI, TNS 643065); Horobetsu-Okkaibetsu, Kondo, K., 1929.08.31 (TI); Masuba-Notoro, Kondo, K., 1929.09.03 (TI); Shakotanzaki, Ohwi, J., 1931.09.03 (KYO); No locality, collector unknown, 1933.08.08 (SAPS-3 sheets); Shakotan, Nodoro-Inemoshiri, Saito, S., no year.09.06 (TI). HABOMAI <23>. Isl. Suisho, Kondo, K., 1929.08.24 (TI).

**7. *Angelica saxatilis*** Turcz. ex Ledeb. [Ezoyama-zengo]  
<SAKHALIN>

MIDDLE. Nabilskiy Region, Chamginskiy Pass <34-upper r.>, Barkalov, V.Y. 2439, 2002.08.08 (SAPS).

SOUTH. 80km N of Dolinsk, Mt. Zhdanko

<57-lower l.>, Takahashi, H. 30188, 2002.08.02 (SAPS); Approx. 8km E of Yuzhno-Sakhalinsk, Mt. Chekhova <65-upper r.>, Takahashi, H. 29262, 2001.07.22 (SAPS- 2 sheets).

**8. *Angelica ursina* (Rupr.) Maxim. [Ezo-nyū]**  
<SAKHALIN>

MIDDLE. Kami-Almdan <28-lower r.>, Kudo, Y. & Tatewaki, M. 6654, 1922.08.24 (SAPS); Nayoro <48-lower l.>, Nakahara, G., 1906.08 (TNS 24162); Kyoto Univ. Exp. Forest, Kusunokigawa <48-lower l.>, Kobayashi, Y. 16, 1928.07.19 (TNS 253415); Shisuka <48-upper r.>, Nakahara, G., 1906.08 (TI).

SOUTH. About 5km SW of Vostochnyy, Pugacheva <57-lower l.>, Inoue, K. 3022, 2003.07.25 (SAPS); S. Sakhal., Kashipo, Syokuminti <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.08.08 (SAPS); Tikhaya village <59-upper l.>, Fukuda, T. 2539, 2001.08.29 (SAPS); Habomai, meadows <60-lower l.>, Hara, H. (326), 1928.08.15 (TI); 20km E of Sokol town, mouth of Bakhura River <62-lower r.>, Takahashi, H. 29109, 2001.07.19 (SAPS); Sussuya <65-upper l.>, Nakahara, G., 1906.08 (TI); Toyohara <65-upper l.>, Koidzumi, G., 1930.08.06 (KYO- 8 sheets); Nishikubo near Toyohara <65-upper l.>, Koidzumi, G., 1930.09.04 (KYO); Toyohara-gun, Toyokita-mura, Konuma <65-upper l.>, Sase, H., 1937.09.04 (SAPS- 3 sheets); Rutaka-gun, Notoromura, Dorokawa <69-lower l.>, Koidzumi, G., 1940.09.03 (KYO); Korsakof <70-upper r.>, Faurie, U. 394, 1908.08 (SAPS); Korsakof <70-upper r.>, Faurie, U. 389, 1908.09 (KYO); Korsakof <70-upper r.>, Faurie, U. 390, 1908.09 (KYO- 2 sheets); Chipisani <71-upper l.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.15 (SAPS); Nagahama-gun, Enbuchi-mura <71-upper r.>, Sase, H., 1936.08.04 (SAPS); Todomoshiri, Kotan <73-lower l.>, Miyake, T., 1906.07.24 (SAPS- 2 sheets).

**9. *Anthriscus sylvestris* (L.) Hoffm. [Shaku]**  
<SAKHALIN>

NORTH. Schmidt Pen., E. coast <05-upper l.>, Fukuda, T. 2048, 2001.08.14 (SAPS).

MIDDLE. Pilewo <36-lower l.>, Miyabe, K. & Miyagi, T., 1906.08.13 (SAPS); Anbetsu <36-lower l.>, Sugawara, S. 16789, 1933.08.12 (SAPT); Muika <38-lower l.>, Miyake, T., 1906.08.25 (SAPS); Shikka-shicho, Yamahana-Ikeda <44-lower r.>, Yoshimura, B. & Hara, M., 1937.07.12 (SAPS); Shikka-shicho, Chirie-gun, Funadomari <45-upper r.>, Tatewaki, M. & Takahashi, Y. 22952, 1936.06.29 (SAPS); Shikka Distr., Chirikoro <45-upper r.>, Yoshimura, B., 1936.08.06 (SAPS); E. Coast, Nayoro <48-lower l.>, Miyabe, K. & Miyagi, T., 1906.07.28 (SAPS); Nayoro <48-lower l.>, Namikawa, I., 1914.08.13 (SAPS); Kyoto Univ. Exp. Forest, Kusunokiyama <48-lower l.>, Kobayashi, Y., 1928.07.20 (TNS 253587); Shikka <48-upper r.>, Sugawara, S. 16786, 16787, 1928.06 (SAPT- 2 sheets); Nokoro <50-upper r.>, Sugawara, S. 16788, 1935.07.30 (SAPT); E. Coast, Shikka-shicho, Motomari <51-upper

l.>, Hoshino, Y. & Sugiyama, S., 1933.08.03 (SAPS); Kitashiretoko Pen., Minamifunakoshi <55-upper r.>, Hoshino, Y., 1933.07.20 (SAPS); Kitashiretoko Pen., Yoman-Rosoku-iwa <55-upper r.>, Okada, S. & Sugiyama, S., 1933.07.21 (SAPS).

SOUTH. Kashipo, Tenbodai <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.07.21 (SAPS); E. Coast, Chikaporonai <59-upper l.>, Miyake, T., 1907.08.15 (SAPS); Tonnaikishi <60-lower l.>, Sawada, S., 1930.07.20 (TI- 2 sheets, TNS 24166); Aihama-mura <61-upper r.>, Imazeki, R., 1941.07.13 (TNS 87769, 87768); Sokol, along the bogs and streams <62-lower l.>, Fukuda, T. 1018, 2001.07.17 (SAPS); 30km N of Yuzhno-Sakhalinsk, Sokol <62-lower l.>, Takahashi, H. 29016, 2001.07.17 (SAPS); Sokol, along the Belaya R. <62-lower l.>, Fukuda, T. 1054, 2001.07.18 (SAPS); Approx. 30km N of Yuzhno-Sakhalinsk, Sokol <62-lower l.>, Takahashi, H. 29529, 2001.07.30 (SAPS); 20km SE of Dolinsk <62-lower r.>, Takahashi, H. 30109, 2002.07.31 (SAPS- 2 sheets); Akou <63-lower l.>, Sugawara, S. 16791, 1930.08.16 (SAPT); Neveljsk <63-lower l.>, Sano, S. & Arai, S., 1958.08.13 (SAPS); W. Coast, Mauka <63-upper r.>, Miyake, T., 1906.07.03 (SAPS); W. Coast, Tomaribokeshi <63-upper r.>, Miyake, T., 1906.07.03 (SAPS); Shimizu <64-upper l.>, Miyake, T., 1906.06.30 (SAPS); Oomagari <64-upper r.>, Miyake, T., 1906.06.30 (SAPS); Dalni <65-upper l.>, Miyake, T., 1906.06.29 (SAPS); Vladimirohuka <65-upper l.>, Miyake, T., 1907.07.27 (SAPS); Toyowara <65-upper l.>, Saito, S., 1929.07.25 (TI); Toyohara <65-upper l.>, Hara, H. (C1142 a & b), 1931.07.30 (TI- 2 sheets); Toyohara <65-upper l.>, Sugawara, S. 16792, 1935.07.04 (SAPT); Tamagawa <65-upper l.>, Sugawara, S. 16793, 1935.07.04 (SAPT), Toyohara-gun, Toyokita-mura, Konuma <65-upper l.>, Sase, H., 1937.06.11 (SAPS); Susuya River <65-lower l.>, Nakahara, G., 1906.06 (TI- 2 sheets, TNS 24166); Mt. Susuya <65-upper r.>, Momose, G. (Koidzumi, H. 83643), 1927 (TNS 930180); Mt. Susuya <65-upper r.>, Hara, H. (421), 1928.08.13 (TI); Mt. Susuya <65-upper r.>, Saito, S., 1929.07.26 (TI- 3 sheets); E. Coast, Ochebukha R. <66-upper l.>, Fukuda, T. 1405, 2001.07.29 (SAPS- 2 sheets); Korssakoff, Aniwa Bay <70-upper r.>, Miyake, T., 1906.06.19 (SAPS); Korssakoff <70-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.12 (SAPS); Mereya <70-upper r.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.14 (SAPS); Ootomari, Aniwa Bay <70-upper r.>, Miyake, T., 1907.07.14 (SAPS); Mereya <70-upper r.>, Faurie, U. 380, 1908.08.14 (KYO- 3 sheets); Nagahama-gun, Enbuchi-mura <71-upper r.>, Sase, H., 1936.06.18 (SAPS); Tookushi <73-upper l.>, Sugawara, S. 16790, 1929.08 (SAPT); Cap. Noto <73-lower r.>, Miyabe, K. & Miyagi, T., 1906.07.19 (SAPS- 2 sheets); Mt. Jyuzo (Mt. Shiretoko) <74-upper l.>, Miyake, T., 1908.07.11 (SAPS, TNS 380865).

<THE KURILS>

NORTH. ATLASOVA <01>. Minami-ura, Ito, S. & Komori, G., 1926.07.11 (SAPS); Mt. Alaid, Koidzumi,

H. 40752, 1932.08.13 (TNS 920289); Minamiura, Ohashi, T., 1932.08.16 (KYO); Minamiura-Tokyowan, Ohashi, T., 1932 (KYO); Minamiura, Ohwi, J. & Yoshii, R. 5867, 1934.07.31 (KYO); Alaidskaya Bay, Takahashi, H. 23680, 1997.08.12 (SAPS). SHUMSHU <02>. Near Bettobu, Yokoyama, S., 1893.09.22 (SAPS); No. locality, Seki, S., 1895 (SAPS); No locality, Gunji, S., 1897 (SAPS); No locality, Gunji, S., 1898 (SAPS); No locality, Yendo, K., 1903.07.13 (TI- 2 sheets); No locality, Yendo, K., 1903.08.17 (TI); Bettobi-numa -Bettobi-gyojyo, Ohashi, T., 1932.08.13 (KYO); Near Bessyo-gaoka, Tatewaki, M. 32374, 1941.07.15 (SAPS); Kagenoma, Tatewaki, M. 32455, 1941.07.20 (SAPS); S of Pochtareva Cape, Takahashi, H. 23342, 1997.08.08 (SAPS- 4 sheets); N of Bol'shoje Lake, Takahashi, H. 23457, 1997.08.09 (SAPS- 2 sheets); Babushkina Bay, Takahashi, H. 23539, 1997.08.10 (SAPS); Baikovo, Takahashi, H. 28027, 2000.07.24 (SAPS). PARAMUSHIR <03>. Musashi-wan, Aizawa, M., 1900.06.22 (SAPS); Murakamiwan, Kudo, Y. 4955, 1920.07.04 (SAPS); Kamogawazaki, Kudo, Y. 5199, 1920.07.12 (SAPS); Nishikawa-Atenkeshi, Kudo, Y. 5230, 1920.07.13 (SAPS); Arakawa, Kudo, Y. 5358, 1920.07.15 (SAPS); Tomarizaki, Kudo, Y. 5710, 1920.08.07 (SAPS); Koidzumi, H. 87797, 1924.08 (TNS 911661); Chikuda-dake, Okada, Y., 1931.07.30 (TNS 302674); Arakawa, Ohwi, J. & Yoshii, R. 168, 1934.07.18 (KYO); Murakami-wan, Ohwi, J. & Yoshii, R. 5934, 1934.08.01 (KYO); 5km S of Severo-Kuril'sk, Takahashi, H. 20779, 1996.08.01 (SAPS- 3 sheets). [Island uncertain: Shumshu or Paramushir] Fujita, K., 1944-45 (TNS 383003).

MIDDLE. URUP <19>. Tokotan, Jimbo, K., 1891.06.15-30 (TI); Tokotan, Uchida, K., 1891.06.16-25 (SAPS); Tokotan River, Jimbo, K., 1891.07.04 (SAPS); River of Tokotan, Jimbo, K., 1891.07.04 (TI); Barhatnyy Bay, Takahashi, H. 20081, 1995.08.28 (SAPS- 2 sheets)

SOUTH. ITURUP <20>. Shibetoro, Yokoyama, S., 1893.08.04 (SAPS); Shana, Koda, 1895 (SAPS); Bettofu, Miura, K., 1906.07.16 (SAPS); Shibetoro, Miyabe, Ken. & Tanaka, Y., 1910.07.16 (SAPS); Moyoro, Miyabe, Ken. & Tanaka, Y., 1910.07.17 (SAPS); Bettobi-Porosu, Saito, S., 1928.08.06 (TI- 3 sheets); Shana, Yoshimura, B., 1937.08.10 (SAPS); Shamanbe, Minakawa, N., 1997.07.30 (SAPS); Shibetoro village, mouth of Hiraitogawa River, Azuma, T. & al. 3037, 2002.06.13 (SAPT); Iturup. Tanaka, Nakano, Ishida, Hara & Otani, no date (SAPS- 2 sheets); Toro Lake, Miyazi, D., no date (KYO). KUNASHIR <21>. Seseki, Tatewaki, M. 3068, 1923.07.20 (SAPS); Chinomichi, along the Onnebetsu, Tatewaki, M. 3681, 1923.08.12 (SAPS); Chinomichi, Kondo, K., 1929.07.24 (TI); Furukamappu, Ohwi, J., 1931.08.20 (KYO); No locality, collector unknown, 1935 (KYO). HABOMAI <23>. Isl. Taraku, Kondo, K., 1929.08.24 (TI).

## 10. *Bupleurum longiradiatum* Turcz. [Hotaru-saiko] <SAKHALIN>

MIDDLE. Northern Sakhalin, Ako <28-lower l.>, Okada, 1923.08.19 (TI); About 10km E of Palevo <33-upper r.>, Takahashi, H. 30402, 2002.08.09 (SAPS); Pilewo <36-lower l.>, Miyabe, K. & Miyagi, T., 1906.08.13 (SAPS); N. Sakhalin, Pjlewo <36-lower l.>, Kudo, Y. & Tatewaki, M. 6110, 1922.07.28 (SAPS); Anbetsu, Kokkyo <36-lower l.>, Ishiyama, T., 1927.07.14 (SAPS); Anbetsu <36-lower l.>, Sugawara, S. 16808, 1933.08.13 (SAPT); Mt. Horotoyama <42-lower r.?, Nagamatsu, 1930.07.26 (KYO); Nayoshi-gun, Kitakozawa <46-upper l.>, Hemmi, M., 1941.09.15 (TNS 631303, 631305); Nayoshi-gun, Kitakozawa <46-upper l.>, Hemmi, M., 1942.08.09 (TNS 631304); E. Coast, Ehorokofunai <48-lower l.>, Miyake, T., 1906.08.11 (SAPS); E. Coast, Nayoro <48-lower l.>, Miyake, T., 1906.09.09 (SAPS); Shikka <48-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.23 (SAPS); Poronai <48-upper r.>, Nakahara, G., 1906.08 (TI); Telpenia Bay, Shikka <48-upper r.>, Miyake, T., 1906.08.12 (SAPS); Siska <48-upper r.>, Sawada, T., 1923.08.14 (TI); Shikka, downstream of Taran River <48-upper r.>, Hara, H. (c1026), 1931.08.03 (TI); Shikka, Kitashiretoko-misaki <48-upper r.>, Sugawara, S. 27189, 1935.07.26 (SAPS); Gastello - Poronaysk <48-lower r.>, Takahashi, H. 30522, 2002.08.13 (SAPS); Shikka, Higashitaraika <49-upper l.>, Imai, Y., 1930.07.23 (SAPS); Taraika <49-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.27 (SAPS); Telpenia Bay, Taraika <49-upper r.>, Miyake, T., 1906.08.13 (SAPS); Nokoro <50-upper r.>, Sugawara, S. 16807, 1935.07.30 (SAPT); Chirie <51-lower r.>, Sugawara, S. 16806, 1935.07.20 (SAPT); Usutomanai <52-upper l.>, Miyabe, K. & Miyagi, T., 1906.08.11 (SAPS); Kitashiretoko-hanto, Yoman-Rosoku-iwa <55-upper r.>, Okada, S. & Sugiyama, S., 1933.07.22 (SAPS); Kitashiretoko-hanto, Kitashiretoko-misaki <55-lower r.>, Hoshino, Y., 1933.07.20 (SAPS); Kitashiretoko-misaki <55-lower r.>, Sugawara, S. 16805, 1935.07.26 (SAPT).

SOUTH. W. Coast, N of Krasnogorsk <56-upper l.>, Yabe, M., 2001.07.22 (SAPS); W. Coast, 10km N of Il'inskiy <56-lower l.>, Yabe, M., 2001.07.22 (SAPS); E. Coast, Mt. Tosso <57-lower l.>, Hiratsuka, N., Iwadare, S. & Nagai, M., 1927.07.23 (SAPS); E. Coast, Soya <57-upper r.>, Miyake, T., 1906.09.15 (SAPS); Kensindai at Kashipo <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.08.07 (SAPS); Kensindai at Kashipo <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.08.18 (SAPS); 5km S of Vostochnyy <57-lower r.>, Takahashi, H. 31021, 2003.07.24 (SAPS); Tomarioru <58-lower l.>, Ikoma, H. 20, 1935.08.12 (KYO); W. Coast, Kusunnai <58-upper r.>, Miyake, T., 1906.07.07 (SAPS); Kusunnai <58-upper r.>, Miyabe, K. & Miyagi, T., 1906.08.09 (SAPS); E. Coast, Shiraraka <59-upper l.>, Miyake, T., 1906.08.09 (SAPS); E. Coast, Tikhaya village <59-upper l.>, Fukuda, T. 2470, 2001.08.28 (SAPS); Noda, meadows <60-upper l.>, Hara, H. (212a),

1928.08.15 (TI); Tonnaikishi <60-lower l.>, Sawada, S., 1930.07.20 (TI); Habomai <60-lower l.>, Tobita, H., 1935.08.03 (KYO); W. Coast, W side of Kostromskoye <60-lower l.>, Takahashi, H. et al. 33810, 2007.07.12 (SAPS); Sakaehama <62-upper l.>, collector unknown, 1913.08.02 (TI); Sakaehama <62-upper l.>, Narita, Y., 1923.08.24 (TI- 2 sheets); Sakaihama <62-upper l.>, Saito, S., 1929.07.28 (TI); Sakaihama <62-upper l.>, Saito, S., 1929.07.29 (TI); Sakaehama <62-upper l.>, Koidzumi, G., 1930.08.12 (KYO- 2 sheets); Sakaehama <62-upper l.>, Hara, H. (C965a & b), 1931.07.31 (TI- 2 sheets); Sakaehama <62-upper l.>, Sugawara, S. 16804, 1937.07.20 (SAPT); E. Coast, mouth of River Naiba <62-upper l.>, Fukuda, T. 1235, 2001.07.23 (SAPS - 2 sheets); Galkinovlaskoe <62-lower l.>, Miyake, T., 1906.09.26 (SAPS); 20km E of Sokol town <62-lower r.>, Takahashi, H. 29113, 2001.07.19 (SAPS); Maoka-cho <63-upper r.>, Mizukoshi, 1926.08.12 (TNS 013986); Maoka <63-upper r.>, Sugawara, S. 16802, 1932 (SAPT); Maoka-cho, Shinkan-yama <63-upper r.>, Maekawa, M. (Koidzumi, H. 112805), 1942.08.15 (TNS 903715); Rutoka <64-lower r.>, Miyake, T., 1906.10.01 (SAPS); Mt. Susuya-dake <65-upper r.>, Sugawara, S. 16803, 1938.08.30 (SAPT); Tonnaichasando <65-lower r.>, Miyake, T., 1906.10.09 (SAPS); E of Dolinsk, near River Shima <66-upper l.>, Fukuda, T. 2435, 2001.08.27 (SAPS); E of Dolinsk, near River Shima <66-upper l.>, Fukuda, T. 2449, 2001.08.27 (SAPS- 3 sheets); Tonnaicha <66-lower l.>, Namikawa, I., 1914.07.29 (SAPS); 30km SE of Yuzhno-Sakhalinsk, S of Okhotskoye <66-lower l.>, Takahashi, H. 27850, 2000.07.16 (SAPS); Airopu <67-lower l.>, Miyabe, K. & Miyagi, T., 1906.07.31 (SAPS); Korssakoff <70-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.12 (SAPS); Mereya <70-upper r.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.14 (SAPS); Korsakof <70-upper r.>, Faurie, U. 378, 1908.09 (KYO- 3 sheets); Ohtomari <70-upper r.>, Koidzumi, H. 1458. 1921.08.20 (TNS 908961); Ohtomari <70-upper r.>, Sawada, T., 1923.08.08 (TI- 2 sheets); Ohtomari <70-upper r.> Narita, Y., 1923.08.20 (TI); Ohtomari <70-upper r.>, Narita, Y. 757, 1923.08.26 (TI); Ohtomari <70-upper r.>, Nakamura, M., 1926.07.25 (TNS 71241); Ohtomari <70-upper r.>, Hara, H. (212b), 1928.08.12 (TI); Ohtomari <70-upper r.>, Saito, S., 1929.07.24 (TI- 2 sheets); Ohtomari <70-upper r.>, Hara, H., 1936.07.28 (TI); Nagahama-gun, Enbuchi-mura <71-upper r.>, Sase, H., 1936.08.18 (SAPS); NW shore of Cape Menaputsky <72-lower r.>, Fukuda, T. 2305, 2001.08.21 (SAPS- 2 sheets); Tookushi <73-upper l.>, Sugawara, S. 16800, 1933.07.01 (SAPT); Cap. Notoro <73-lower l.>, Miyabe, K. & Miyagi, T., 1906.07.19 (SAPS); Shiranushi <73-lower l.>, Sugawara, S. 16801, 1933.07.02 (SAPT).

[No locality] Komatsu, no date (TI- 3 sheets); Hiruta, A., no date (TNS 99665). [Locality undetermined] Torestokoi, Nakahara, G., 1906.08 (TI). <THE KURILS>

SOUTH. KUNASHIR <21>. Kometoga-mura, Ichibishinai, Endo, C., 1894.07.27 (SAPS); Seseki,

Tatewaki, M. 3085, 1923.07.20 (SAPS); Nakanokotan, Tatewaki, M. 3155, 1923.07.21 (SAPS); Kunashir, Furukamappu, collector unknown, 1923.09.03 (TNS 269584); Sainokawara, Nagai, M. & Shimamura, M., 1929.07.29 (SAPS); Shiranuka-Atoiya, Nagai, M. & Shimamura, M., 1929.08.01 (SAPS); Tomari, Ohtani, H., 1929.08.09 (SAPS); Furukamappu, Matsumura, Y., 1930.07.20 (KYO); No locality, collector unknown, 1935 (KYO- 2 sheets). SHIKOTAN <22>. No locality, Kawakami, T., 1898.08 (TI); Anama, Takeda, H., 1909.07.20 (SAPS); Anama, Arai, M. 19, 1910.07.09 (SAPS); Anama, Miyabe, Ken. & Tanaka, Y., 1910.08.03 (SAPS); Matsugahama, Miyabe, Ken. & Tanaka, Y., 1910.08.13 (SAPS); Matakotan, Miyabe, Ken. & Tanaka, Y., 1910.08.13 (SAPS); Masuba, Miyabe, Ken. & Tanaka, Y., 1910.08.14 (SAPS); Anama, Arai, M. 84, 1910.09.14 (SAPS); No locality, Koidzumi, H. 87723, 1924.08 (TNS 908976); Mt. Shakotan, Saito, S., 1925.08.30 (TI- 2 sheets); Shakotan Harbor, Saito, S., 1925.09.01 (TI); No locality, Saito, S., 1925.09.01 (TI); Horobetsu, Saito, S., 1925.09.04 (TI- 2 sheets); No locality, Kondo, K. 7907, 1927.08.11 (TI); No locality, Kondo, K. 7896, 1927.08.11 (TI, TNS 643732); Shakotan, Tatewaki, M. 9564, 1927.08.22 (SAPS); Shakotan, Kondo, K., 1929.08.04 (TI); Mt. Shakotan, Kondo, K., 1929.08.06 (TI); Chiboi, Kondo, K., 1929.08.10 (TI- 2 sheets); No locality, Kondo, K., 1929.08.11 (TI); Anama, Kondo, K., 1929.08.28 (TI- 2 sheets); Horobetsu-Okkaibetsu, Kondo, K., 1929.08.31 (TI); Masuba-Notoro, Kondo, K., 1929.09.03 (TI); No locality, Kondo, K., 1929.09.03 (TI); Chiboi-Umanose, Kondo, K., 1929.09.07 (TI); Kagenoma, Ohwi, J., 1931.08.04 (KYO); Notoro, Ohwi, J., 1931.08.11 (KYO); Umanose, Ohwi, J., 1931.08.30 (KYO); Shikotan, Shakotan-Kagenoma, Ohwi, J., 1931.08.31 (KYO); type of *B. shikotanense* M. Hiroe); Boro-zan, collector unknown, 1937.08.10 (TNS 266983).

## 11. *Bupleurum triradiatum* Adams ex Hoffm. [Rebun-saiko] <SAKHALIN>

NORTH. E coast of Peninsula of Schmidt <05-upper l.>, Fukuda, T. 2116, 2001.08.14 (SAPS- 2 sheets); Peninsula of Schmidt, Taliki River <05-upper l.>, Barkalov, V.Y. 10803, 2001.08.14 (SAPS); S of Peninsula of Schmidt <05-lower r.>, Fukuda, T. 2176, 2001.08.16 (SAPS).

MIDDLE. Nabilskiy Mts., Changinskiy Pass <34-upper r.>, Barkalov, V.Y. 2520, 2002.08.08 (SAPS); Shikka-gun, Ikeda, Mt. Sekkai-yama <39-lower l.>, Yoshimura, B. & Hara, M. (108), 1937.07.15 (SAPS- 2 sheets, TNS 234421); Shikka, Mt. Shirochi-yama <45-upper l.>, Sugawara, S. 29275, 29276, 1935.08.07 (SAPS); Mt. Shirochi-yama <45-upper l.>, Sugawara, S. 16821, 1935.08.07 (SAPT); E. Coast, Funadomari <45-upper r.>, Kawashima, M. 11, 1935.07.16 (SAPS); Shikka, Mt. Kawashima-yama <45-upper r.>, Sugawara, S. 29285, 29286, 1935.08.03 (SAPS); Mt. Kawashima-yama <45-upper r.>, Sugawara, S. 16826, 1935.08.03 (SAPT); Shikka-shicho, Chirie-

gun, Mt. Kawashima-yama <45-upper r.>, Tatewaki, M. & Takahashi, Y. 22718, 1936.06.21 (SAPS); Shikka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, Tatewaki, M. & Takahashi, Y. 22998, 1936.06.29 (SAPS); Shikka Distr., Mt. Kawashima <45-upper r.>, Yoshimura, B., 1936.08.09 (SAPS).

SOUTH. Mt. Nupuripo <57-lower l.>, Miyake, T., 1906.08.13 (SAPS); E. Coast, Mt. Nupuripo <57-lower l.>, Miyake, T., 1907.08.13 (SAPS); Mt. Tossozan <57-lower l.>, Sugawara, S. 16828, 1924.07.10 (SAPT); Nuppuripo <57-lower l.>, Sugawara, S. 16, 1925.07.13 (SAPS); Mt. Tosso <57-lower l.>, Kawachi, K., 1926.08.04 (KYO); E. Coast, Mt. Tosso <57-lower l.>, Hiratsuka, N., Nagai, M. & Iwadare, S., 1927.07.23 (SAPS); Mt. Tosso, 9-gome <57-lower l.>, Koidzumi, H. 20936, 1929.07.29 (TNS 920002); Mt. Tosso, peak <57-lower l.>, Koidzumi, H. 20935, 1929.07.29 (TNS 920047); Mt. Nupuripo <57-lower l.>, Saito, S. 249, 1929.08.03 (TI- 3 sheets); Mt. Tosso <57-lower l.>, Hara, H. (C825 b & c), 1931.08.05 (TI- 3 sheets); Mt. Tosso <57-lower l.>, Ohwi, J., 1932.07.22 (KYO); Mt. Nupuripo <57-lower l.>, Sugawara, S. 20, 1940.08.03 (TI); Approx. 80km N of Dolinsk, Tsapko-N peak of Mt. Vladimirovka <57-lower l.>, Takahashi, H. 29579, 2001.08.02 (SAPS); Mt. Nupuripo <57-lower l.>, Takahashi, S., no date (KYO); Shirutori, Ishiyama <57-upper r.>, Sugawara, S. 16829, 1928(or7).08.02 (SAPT); Mt. Kashipo, peak <57-upper r.>, Koidzumi, H. 21397, 1929.08.01 (TNS 920050); Mt. Kashipo-dake <57-upper r.>, Sugawara, S. 16827, 1932.07.12 (SAPT); Mt. Kashipo <57-upper r.>, Ohwi, J., 1932.07.23 (KYO); Horonaipo at Kashipo <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.08.14 (SAPS); Mt. Kashipo <57-upper r.>, Ohwi, J., 1932.08.18 (KYO); Mt. Nodasamu-dake <60-upper r.>, Sugawara, S. 16830, 1934.08 (SAPT); Mt. Susuyadake <65-upper r.>, Sugawara, S. 16825, 1928.09.10 (SAPT); Mt. Ochiho-dake <65-upper r.>, Sugawara, S. 16823, 1933.09.10 (SAPT); Soni (Honto) <73-upper l.>, Kimoto, Murayama & Takee, 1931.08.17 (SAPS); Tookushi <73-upper l.>, Sugawara, S. 16822, 1932.08 (SAPT); Isl. Kaiba-to <73-lower l.>, Sugawara, S. 16824, 1934.09.12 (SAPT).

[No locality] Sugawara, S. (Koidzumi, H. 82463), 1925.07 (TNS 920020).

#### <THE KURILS>

SOUTH. SHIKOTAN <22>. Mt. Shakotan, Saito, S., 1925.08.30 (TI- 4 sheets); No locality, Kondo, K. 7908, 1927.08.11 (TI- 3 sheets); Near Shakotan, Tatewaki, M. 9521, 1927.08.23 (SAPS); No locality, Kndo, K., 1929.08.06 (TI); Chiboi, Kondo, K. (6164), 1929.08.10 (TI- 2 sheets, TNS 645198); Anama, Kondo, K., 1929.08.28 (TI- 2 sheets); Chiboi-Umanose, Kondo, K. (5950), 1929.09.07 (TI- 2 sheets, TNS 643131); Shakotan, Ono, S.T., 1930.07.20 (TI); Matakotan, Ohwi, J., 1931.07.19 (KYO); Umanose, Ohwi, J., 1931.08.30 (KYO); Shakotanzaki, Ohwi, J., 1931.09.03 (KYO); Shakotan, Ono, S.T., 1933.07.20 (TI); Mt. Matakotan, Tatewaki, M. 20840, 1934.06.30 (SAPS).

## 12. *Cicuta virosa* L. [Doku-zeri]

### <SAKHALIN>

NORTH. N coast of Peninsula Schmidt <04-upper r.>, Fukuda, T. 1679, 2001.08.06 (SAPS- 2 sheets); Near Piliwo <04-lower r.>, Kudo, Y. & Ishida, B. 7126, 1923.08.25 (SAPS); N. Sakhalin, Parukata, tundra <26-upper r.>, Kudo, Y. & Tatewaki, M. 6425, 1922.08.10 (SAPS).

MIDDLE. N. Sakhalin, Ako-tundra <28-lower l.>, Kudo, Y. & Tatewaki, M. 6097, 1922.07.26 (SAPS); N. Sakhalin, Tsuemoff <33-upper l.>, Kudo, Y. & Tatewaki, M. 6263, 1922.08.03 (SAPS); Golojikoff <37-lower r.>, Miyake, T., 1906.08.26 (SAPS); Hamdasa <37-lower r.>, Miyake, T., 1906.08.27 (SAPS); Poronaimura <37-lower r.>, Miyake, T., 1906.08.29 (SAPS); Mirnyy-Pobedin <38-lower l.>, Fujii, N. F01316, 2002.08.12 (SAPS); Shikka-shicho, Shibunkoro <45-lower r.>, Hoshino, Y. & Sugiyama, S., 1933.08.04 (SAPS); E. Coast, Ehorokofunai <48-lower l.>, Miyake, T., 1906.08.11 (SAPS); Shikka <48-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.23 (SAPS- 2 sheets); Telpenia Bay, Shikka <48-upper r.>, Miyake, T., 1906.08.12 (SAPS); Shikka <48-upper r.>, Miyake, T., 1906.09.02 (SAPS); Shisuka <48-upper r.>, Namikawa, I., 1914.08.12 (SAPS); Siska <48-upper r.>, Sawada, T., 1923.08.14 (TI- 2 sheets); Shikka <48-upper r.>, Sugawara, S. 16855, 1928.08.10 (SAPT); Shisuka <48-upper r.>, Koidzumi, H. 21664, 1929.08.03 (TNS 919922); Shikka <48-upper r.>, Otani, H. & Imai, Y., 1930.07.20 (SAPS); Nishitaraika <49-upper l.>, Ohwi, J., 1932.08.14 (KYO); Telpenia Bay, Taraika <49-upper r.>, Miyake, T., 1906.08.13 (SAPS); Nokoro <50-upper r.>, Sugawara, S. 16848, 1935.07.30 (SAPT); Kitashiretoko-hanto, Naifuto <51-lower l.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.30 (SAPS); Chirihasan <51-lower r.>, Miyabe, K. & Miyagi, T., 1906.07.25 (SAPS); Kitashiretoko-hanto, Kitafunakoshi <51-lower r.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.23 (SAPS); E. Coast, Sakukotan <54-upper l.>, Miyake, T., 1906.09.13 (SAPS); E. Coast, Chyakamaushinai <54-lower l.>, Miyake, T., 1906.09.13 (SAPS).

SOUTH. About 5km SW of Vostochnyy, Pugacheva <57-lower l.>, Inoue, K. 3034. 3036. 3018, 2003.07.25 (SAPS); Seashore at Kashipo <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.07.30 (SAPS); 110km N of Dolinsk, Zaozernaya <57-upper r.>, Takahashi, H. 30207, 2002.08.03 (SAPS); Kusunnai <58-upper r.>, Miyake, T., 1906.07.07 (SAPS); W. Coast, Kusunnai <58-upper r.>, Miyabe, K. & Miyagi, T., 1906.08.09 (SAPS- 2 sheets); Manui <59-upper l.>, Saito, S., 1929.08.05 (TI- 3 sheets); Chikahoro <59-upper l.>, Hara, H. (C801), 1931.08.06 (TI); Fukakusa <61-lower r.>, Sugawara, S. 16851, 1923.08.18 (SAPT); Fukakusa <61-lower r.>, Sugawara, S. 99, 1925.07.10 (SAPS); Sakaihama <62-upper l.>, Sawada, T., 1923.08.24 (TI); Sakaehama <62-upper l.>, Koidzumi, G., 1930.08.13 (KYO- 4 sheets); E. Coast, mouth of River Naiba <62-upper l.>, Fukuda, T. 1230, 2001.07.23 (SAPS); North

Saghalien, Ochiai <62-lower l.>, Koidzumi, H. 1460, 1921.08.21 (TNS 920025); Mauka <63-upper r.>, Miyabe, K. & Miyagi, T., 1906.08.17 (SAPS); Maoka <63-upper r.>, Sugawara, S. 16849, 1923.08.05 (SAPT); Approx. 25km W of Yuzhno-Sakhalinsk <64-upper l.>, Takahashi, H. 29406, 2001.07.26 (SAPS); Toyosakae <64-lower l.>, Sugawara, S. 16852, 1930.07.28 (SAPT); Vladimirohuka <65-upper l.>, Miyabe, K. & Miyagi, T., 1906.08.22 (SAPS); Toyohara <65-upper l.>, Saito, S. 943, 1929.07.25 (TI); Toyohara <65-upper l.>, Koidzumi, G., 1930.08.07 (KYO); Toyohara-gun, Toyokita-mura, Konuma <65-upper l.>, Sase, H., 1937.07.27 (SAPS); Hamazi <65-lower l.>, Sugawara, S. 16860, 1928.06.10 (SAPT); Kaizuka <65-lower l.>, Hara, H. (432), 1928.08.17 (TI); Kaizuka <65-lower l.>, Sugawara, S. 16847, 1928.08.19 (SAPT); Shinba <65-lower l.>, Koidzumi, G., 1940.09.02 (KYO); Mereya <70-upper r.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.14 (SAPS); Korsakof <70-upper r.>, Faurie, U. 384, 1908.09 (KYO, SAPS); Ootomari <70-upper r.>, Sugawara, S. 16854, 1930.07.25 (SAPT); Nankei-cho <70-upper r.>, Sugawara, S. 16843, 16845, 16846, 1932.08.28 (SAPT); Ootomari <70-upper r.>, Sugawara, S. 16844, 1932.08.28 (SAPT); E of Korsakov, along River Mereya <70-upper r.>, Fukuda, T. 1332, 2001.07.28 (SAPS); Chipisani <71-upper l.>, Nakahara, G., 1906.08 (TI- 2 sheets, TNS 24171); Nagahama <71-upper r.>, Sugawara, S. 16850, 1929.07.25 (SAPT); Nagahama-gun, Enbuchi-mura <71-upper r.>, Sase, H., 1935.07.18 (SAPS).

[No locality] Faurie, U. 379, 1908.08 [SAPS]; Faurie, U. 379, 1908.09 (KYO- 3 sheets); Komatsu, no date (TI).

#### <THE KURILS>

SOUTH. ITURUP <20>. Oyachi, Saito, S., 1928.08.11 (TI); Bettobi, Saito, S. 406, 1928.08.17 (TI- 2 sheets); Bettobi, Yoshimura, B., 1937.08.11 (SAPS- 2 sheets); Rubetsu village, mouth of Naibo River-Iribushi, Azuma, T. & al. 3261, 2002.06.19 (SAPT). KUNASHIR <21>. Kaikaramui, Tatewaki, M. 3231, 1923.07.22 (SAPS); Furukamapp, Tatewaki, M. 3369, 1923.07.25 (SAPS, SAPT); Chinomichi, Tatewaki, M. 3533, 1923.08.02 (SAPS); Shiranuka, Nagai, M. & Shimamura, M., 1929.07.29 (SAPS- 2 sheets); Shiranuka, Nagai, M. & Shimamura, M., 1929.07.30 (SAPS); Nikishiro, Nagai, M. & Shimamura, M., 1929.08.13 (SAPS- 3 sheets); Furukamappu-Nikishiro, Matsumura, Y., 1930.07.21 (KYO); Tomari, Tatewaki, M. 25342, 1936.08.17 (SAPS). SHIKOTAN <22>. River Notoro, Ohwi, J., 1931.08.09 (KYO).

**13. Conioselinum chinense** (L.) Britt., Pogg. et Sterns [Karafuto-ninjin]

#### <SAKHALIN>

NORTH. N. Sakhalin, Ado <04-upper l.>, Kudo, Y. & Ishida, B. 7012, 1923.09.07 (SAPS); N. Sakhalin, Piliwo <04-lower r.>, Kudo, Y. & Ishida, B. 7125, 1923.08.25 (SAPS); S of Peninsula Schmidt, W coast <07-upper l.>, Fukuda, T. 1887, 2001.08.10 (SAPS- 2 sheets).

MIDDLE. Northern Sakhalin, Ako <28-lower l.>, Okada, 1923.08.19 (TI); Pilewo <36-lower l.>, Miyabe, K. & Miyagi, T., 1906.08.13 (SAPS); Ambetsu <36-lower l.>, Tokunaga, M. & Kawai, K., 1929.09.02 (SAPS); Nayoshi-gun, Nayoshi-mura, Oyau <36-lower l.>, Koidzumi, G., 1940.08.20 (KYO); E. Coast, Kokkyo, Asase <40-lower l.>, Hoshino, Y. & Sugiyama, S., 1933.08.11 (SAPS); Borodo <43-lower l.>, Miyake, T., 1906.09.02 (SAPS); Shikka-shicho, Chirikoro-Chiroyondo <45-upper r.>, Hoshino, Y. & Sugiyama, S., 1933.08.08 (SAPS); Shikka-shicho, Chirikoro <45-upper r.>, Hoshino, Y. & Sugiyama, S., 1933.08.08 (SAPS); Shikka-shicho, Atsunai River <45-upper r.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.08.12 (SAPS); Nayoshi-gun, Morotsu <46-upper l.>, Hemmi, M., 1942.09.06 (TNS 108779, 631306); Nayoro <48-lower l.>, Nakahara, G., 1906.08 (TI); E. Coast, Ehorokofunai <48-lower l.>, Miyake, T., 1906.08.11 (SAPS); E. Coast, Nayoro <48-lower l.>, Miyake, T., 1906.09.09 (SAPS); Shikka <48-upper r.>, Miyake, T., 1906.09.02 (SAPS); Sisuka <48-upper r.>, Ishida, S., 1909.08 (TI); Siska <48-upper r.>, Sawada, T., 1923.08.14 (TI); Shikka <48-upper r.>, Kitamura, S., 1930.08.17 (KYO); Shikka, Nishitaraika <49-upper l.>, Otani, H., 1930.08.02 (SAPS); Telpenia Bay, Taraika <49-upper r.>, Miyake, T., 1906.08.13 (SAPS); Shikka-shicho, Nagaiso <51-upper l.>, Hoshino, Y. & Sugiyama, S., 1933.08.03 (SAPS); Kitashiretoko-hanto, Noto <51-lower l.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.14 (SAPS); E. Coast, Kotankeshi <54-upper r.>, Miyake, T., 1906.09.12 (SAPS); Kitashiretoko-hanto, Yoman-Rosoku-iwa <55-upper r.>, Okada, S. & Sugiyama, S., 1933.07.21 (SAPS); Kitashiretoko-hanto, Kitashiretoko-misaki <55-lower r.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.19 (SAPS).

SOUTH. E. Coast, Kashipo <57-upper r.>, Miyake, T., 1906.09.14 (SAPS); E. Coast, Soya <57-upper r.>, Miyake, T., 1906.09.15 (SAPS); Motodomari (Vostotschnyi) <57-upper r.>, Saito, S. 3731, 1929.08.01 (TI- 3 sheets, TNS 723784); Seaside of Kasipo <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.07.30 (SAPS); Noda <60-upper l.>, Hara, H. (162), 1928.08.16 (TI); Sakachama <62-upper l.>, Narita, Y. 797, 1923.08.26 (TI); E. Coast, Rore <62-upper r.>, Miyake, T., 1906.09.27 (SAPS); Rutoka <64-lower r.>, Miyake, T., 1906.10.01 (SAPS); Torechapaachi <65-lower l.>, Nakahara, G., 1906.08 (TNS 24174); Kaizuka <65-lower l.>, Hara, H. (162b), 1928.08.17 (TI); Kaizuka <65-lower l.>, Koidzumi, G., 1930.08.08 (KYO); E of Dolinsk, near River Shima <66-upper l.>, Fukuda, T. 2442, 2001.08.27 (SAPS); Aniwa Bay, Korssakoff <70-upper r.>, Miyake, T., 1906.06.19 (SAPS); Mereya <70-upper r.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.14 (SAPS); Ootomari <70-upper r.>, Sugawara, S. 16878, 1940.07.02 (SAPT); Merai <70-upper r.>, Sugawara, S. 16879, 1940.07.05 (SAPT); Chipisani <71-upper l.>, Nakahara, G., 1906.08 (TI); Nagahama-gun, Enbuchi-mura <71-upper r.>, Sase, H., 1937.08.13 (SAPS); Nagahama-gun,

Enbuchi <71-upper r.>, Sase, H., 1937.08.17 (TNS 85022); SE shore of Lagoon Busse <72-upper l.>, Takahashi, H. 30643, 2002.08.16 (SAPS); Nishinotoro-Soni <73-lower l.>, Saito, S., 1929.08.22 (TI- 2 sheets); Isl. Kaibato <73-lower l.>, Koidzumi, H. 108326, 1938.08.18 (TNS 911737); Chiishiya <73-upper r.>, Miyabe, K. & Miyagi, T., 1906.08.18 (SAPS).

<THE KURILS>

NORTH. ANTSIFEROVA <04>. No locality, Takahashi, H. 23795, 1997.08.15 (SAPS).

MIDDLE. CHIRINKOTAN <08>. E of Cape Ptichy, Takahashi, H. 21592, 1996.08.10 (SAPS). EKARMA <09>. No locality, Tatewaki, M. 11356, 1928.08.11 (SAPS); E of Cape Shpilevoy, Takahashi, H. 21633, 1996.08.10 (SAPS). SHIASHKOTAN <10>. No locality, Ishikawa, T., 1894.06.23 (SAPS- 2 sheets). RAIKOKE <11>. E side of island, Takahashi, H. 21868, 1996.08.13 (SAPS). MATUA <12>. Matua, Banjo-jima, Tatewaki, M. & Tokunaga, Y. 12287, 1928.09.07 (SAPS); Dvoynaya Bay-Aynu Bay, Takahashi, H. 22049, 1996.08.15 (SAPS). RASSHUA <13>. Yoriki-hama, Takahashi, H. 19111, 1995.08.12 (SAPS). USHISHIR-RYPONKICHA <14a>. No locality, Tatewaki, M. & Tokunaga, Y. 12567, 1928.08.11 (SAPS). USHISHIR-YANKICHA <14b>. No locality, Tatewaki, M. & Tokunaga, Y. 12496, 1928.09.01 (SAPS); Onsen-wan, Tatewaki, M. & Takahashi, K. 15840, 1929.09.10 (SAPS); Higashi-wan, Tatewaki, M. & Takahashi, K. 15865, 1929.09.12 (SAPS); Kraternaya Bay, Takahashi, H. 19326, 1995.08.14 (SAPS- 2 sheets); Kraternaya Bay, Takahashi, H. 19272, 1995.08.14 (SAPS); Kraternaya Bay, Takahashi, H. 19332, 1995.08.14 (SAPS). KETOI <15>. No locality, Tatewaki, M. & Tokunaga, Y. 11518, 1928.09.01 (SAPS); Near Ishikuzurehama, Tatewaki, M. & Takahashi, K. 15396, 1929.08.17 (SAPS); Mouth of Stochnyy River, Takahashi, H. 19555, 1995.08.19 (SAPS). SIMUSHIR <16>. Broton Bay, Tatewaki, M. & Tokunaga, Y. 12089, 1928.08.14 (SAPS). BROUTONA <17>. Nodostupnyy Cape, Ohara, M., 1995.08.23 (SAPS- 2 sheets). CHIRPOI <18a>. Peschanaya Bay, Takahashi, H. 19873, 1995.08.23 (SAPS). BRAT CHIRPOEV <18b>. W of Samotuga Cape, Takahashi, H. 24085, 1997.08.20 (SAPS); W of Samotuga Cape, Takahashi, H. 24098, 1997.08.20 (SAPS); Uglovaya Bay, Takahashi, H. 28448, 2000.08.04 (SAPS). URUP <19>. Iwayadomari, Uchida, K., 1891.06.11 (SAPS); Anama, Jimbo, K., 1891.06.18 (SAPS); No locality, Watanabe, K., 1944.06-07 (TI); Barhatnyy Bay, Takahashi, H. 20082, 1995.08.28 (SAPS); Inland from Ukromnaya Bay, Takahashi, H. 22104, 1996.08.20 (SAPS).

SOUTH. ITURUP <20>. Moyoro, Ijinkotan, Yokoyama, S., 1893.07.27 (SAPS); Mariyomai, Kawakami, T., 1898.08 (TI); Shana, Kawakami, T., 1898.09 (TI); Rubetsu, Kawakami, T., 1898.09 (TI); Mt. Hitokappu-yama, Yendo, K., 1903 (TI); Shamanbe, Kondo, K., 1927.07.14-15 (TI); Shana, Saito, S., 1928.09.05 (TI); Rubetsu-kaigan, Koidzumi, H. 24946, 1930.08.06 (TNS 920136); Kamuikotan, Koriba, M.

& Yoshii, R., 1933.08.07 (KYO); Shana, Yoshimura, B., 1939.08.20 (SAPS- 2 sheets). KUNASHIR <21>. Ruyabetsu-mura, Endo, C., 1894.08.15 (SAPS); Chachanupuri, Kondo, K., 1929.07.20 (TI); Chinomichi, Kondo, K., 1929.07.24 (TI); Cape Atoiya, Nagai, M. & Shimamura, M., 1929.08.03 (SAPS); Wennai-Furukamappu, Nagai, M. & Shimamura, M., 1929.08.11 (SAPS); Rebun'iso, Koidzumi, H. 21985, 1929.08.14 (TNS 900622); Zenbekotan, Tatewaki, M. 25640, 1936.08.22 (SAPS). SHIKOTAN <22>. Anama, Takeda, H., 1909.07.21 (SAPS); Anama, Arai, M. (13), 1910.07.09 (SAPS, TNS 29734); No locality, Abe, A., 1924.07.17 (TNS 429834, 429835); Shakotan Harbor, Saito, S. 765, 1925.09.01 (TI- 2 sheets); Shakotan-Horobetsu, Saito, S. 9982, 1925.09.04 (TI); Horobetsu, Saito, S. 6173, 1925.09.04 (TI- 3 sheets); Notoro-Inemoshiri, Saito, S., 1925.09.06 (TI); No locality, Kondo, K., 1927.08.11 (TI); Shakotan, Kondo, K., 1929.08.04 (TI); Anama, Saito, S., 1929.08.28 (TI); Anama, Kondo, K., 1929.08.28 (TI); Notoro - Sendaiwan, Kondo, K., 1929.09.03 (TI); Shakotanzaki, Ohwi, J., 1931.09.03 (KYO).

**14. Conioselinum filicinum** (H. Wolff) H. Hara [Miyama-senkyū] ("Intermediate plant" means the plants which show the intermediate morphological characters between *Conioselinum chinense* and *C. filicinum*)

<THE KURILS>

MIDDLE. URUP <19>. Kobune, Tatewaki, M. 9756, 1927.08.26 (SAPS; intermediate plant); Tokotan, lake-side, Tatewaki, M. 9743, 1927.08.28 (SAPS; intermediate plant); Kobune, Tatewaki, M. & Takahashi, K. 15983, 1929.09.18 (SAPS; intermediate plant); Smuglyy Bay, Takahashi, H. 19942, 1995.08.24 (SAPS); Inland from Ukromnaya Bay, Takahashi, H. 22174, 1996.08.20 (SAPS; intermediate plant); Inland from Ukromnaya Bay, Takahashi, H. 22181, 1996.08.20 (SAPS); Tetyayeva Bay, Takahashi, H. 28621, 2000.08.08 (SAPS; intermediate plant).

SOUTH. ITURUP <20>. Mt. Atoiya, Kondo, K., 1927.07.21 (TI; intermediate plant); No locality, Koidzumi, H. 24829, 1930.08.05 (TNS 920058; intermediate plant); Tzando, Koidzumi, H. 25003, 1930.08.08 (TNS 920042; intermediate plant); Shibetro, Nikishiro-sando, Koidzumi, H. 25518, 1930.08.17 (TNS 919891; intermediate plant); Toro-Naibo, Kambe, M., 1890.08 (SAPS, TI; intermediate plant); Bettobu, Funayama, Y., 1912.08.20 (SAPS; intermediate plant); Mt. Sashiusu, Saito, S., 1928.08.22 (TI; intermediate plant); Shana, Yoshimura, B., 1937.08.08 (SAPS; intermediate plant); Shibetoro-Moyoro, Yoshimura, B. & Yokoyama, H., 1938.08.02 (SAPS; intermediate plant). KUNASHIR <21>. Mt. Chacha, Koidzumi, H. 22095, 1929.08.19 (TNS 920054).

**15. Cryptotaenia japonica** Hassk. [Mitsuba] <SAKHALIN>

SOUTH. Tohutsu <60- upper l.>, Hara, H. (422), 1928.08.15 (TI).

<THE KURILS>

SOUTH. KUNASHIR <21>. Chinomichi, Tatewaki, M. 3653, 1923.08.12 (SAPS).

**16. Glehnia littoralis** F.Schmidt ex Miq. [Hama-böhū]  
<SAKHALIN>

NORTH. E. Coast, Gulf of Odoptu <11-upper l.>, Yabe, M. 2613, 2001.08.03 (SAPS); N. Sakhalin, Nyiwo <23-lower l.>, Kudo, Y. & Tatewaki, M. 6682, 1922.08.12 (SAPS).

MIDDLE. Shikka-shicho, Shibunkoro <45-lower r.>, Hoshino, Y. & Okada, S., 1933.08.03 (SAPS); Near Shisuka, Satsukari <48-upper r.>, Namikawa, I., 1914.08.11 (SAPS); Shikka <48-upper r.>, Sugawara, S. 16911, 1927.08.03 (SAPT); Ushiro-mura, near Kotan <52-upper l.>, Hara, H., 1936.07.30 (TI).

SOUTH. W. Coast, Kusunnai <58-upper r.>, Miyake, T., 1906.07.07 (SAPS); E. Coast, Kusunnai <58-upper r.>, Miyake, T., 1906.09.21 (SAPS); Motodomari-gun, Kushun'nai-mura <58-upper r.>, Sase, H., 1937.09.10 (SAPS); Shiraraka <59-upper l.>, Miyake, T., 1906.07.09 (SAPS); Shiraraka <59-upper l.>, Miyake, T., 1906.08.09 (SAPS); Habomai <60-lower l.>, Sugawara, S. 16909, 1929.09.02 (SAPT); W. Coast, Habomai-gen'ya <60-lower l.>, Kurushima, S., 1930.09 (TI); Dubki <62-upper l.>, Miyabe, K. & Miyagi, T., 1906.07.22 (SAPS); Sakaehama (Starodubskove) <62-upper l.>, Saito, S. 3678 and/or 3768, 1929.07.29 (TI, TNS 755151); Sakaehama <62-upper l.>, Koidzumi, G., 1930.08.13 (KYO); Ochiai-gun, Sakaehama-mura <62-upper l.>, Sase, H., 1934.08.05 (SAPS); Mereya <70-upper r.>, Faurie, U. 381, 1908.08.14 (KYO); Lagoon Busse <71-upper r.>, Takahashi, H. 30637, 2002.08.15 (SAPS).

[No locality] Komatsu, no date (TI).

<THE KURILS>

NORTH. SHUMSHU <02>. No locality, Ishikawa, T., 1894.06.29 (SAPS).

MIDDLE. SIMUSHIR <16>. Nakanoura, Yumita, C. 11825, 1928.08 (SAPS). CHIRPOI<18a>. Peschanaya Bay, Takahashi, H. 19880, 1995.08.23 (SAPS). URUP <19>. Tokotan, Jimbo, K., 1891.06.15-30 (SAPS); Tokotan, Uchida, K., 1891.06.16-25 (SAPS); Daibawan, Jimbo, K., 1891.06.30 (SAPS); No locality, Aizawa, M., 1900.07.02 (SAPS); Tokotan, Tatewaki, M. 9622, 1927.08.29 (SAPS); Otkrytyy Bay, Takahashi, H. 18492, 1995.08.04 (SAPS); Tetyayeva Bay, Takahashi, H. 28643, 2000.08.08 (SAPS).

SOUTH. ITURUP <20>. Bettobu, Kambe, M., 1891 (SAPS); Shana, Yoshimura, B., 1937.08.07 (SAPS). KUNASHIR <21>. Kaikaramui, Tatewaki, M. 3222, 1923.07.22 (SAPS); Cape Atoiya, Nagai, M. & Shimamura, M., 1929.08.03 (SAPS); Chinomichi, Koidzumi, H. 21816, 1929.08.13 (TNS 516979); Seseki-Mt. Iwo, Matsumura, Y., 1930.07.24 (KYO); Kotankeshi, Tatewaki, M. 25548, 1936.08.20 (SAPS); Kotankeshi, Tanaka, Nakano, Isida, Hara & Otani, 1939.08.16 (SAPS). SHIKOTAN <22>. No locality, Kawakami, T., 1898.08 (TI); Shakotanzaki, Ohwi, J.,

1931.09.03 (KYO).

**17. Heracleum lanatum** Michx. [Ō-hanaudo]  
<SAKHALIN>

NORTH. E coast of Schmidt Peninsula <05-upper l.>, Fukuda, T. 2071, 2001.08.14 (SAPS).

MIDDLE. About 40km E of Palevo, N of Chamginskiy Pass <34-upper r.>, Takahashi, H. 30368, 2002.08.08 (SAPS- 2 sheets); Anbetsu <36-lower l.>, Sugawara, S. 16921, 1933.08.13 (SAPT); Anbetsu, Kokkyo <36-lower l.>, Hara, H., 1936.08.01 (TI); Hamdasa <37-lower r.>, Miyake, T., 1906.08.27 (SAPS); Mt. Mimizuku-yama <42-lower r.>, Tobita, H., 1926.07.10 (KYO); R. Koruria <43-lower l.>, Miyake, T., 1906.08.22 (SAPS); Shikka-shicho, Chirikoro <45-upper r.>, Hoshino, Y. & Sugiyama, S., 1933.08.08 (SAPS); Shikka, Aba <48-upper l. ?>, Otani, H. & Imai, Y., 1930.07.31 (SAPS); E. Coast, Nayoro <48-lower l.>, Miyake, T., 1906.08.21 (TNS 380137); Kitashiretoko-hanto, Noto <51-lower l.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.12 (SAPS); Kitashiretoko-hanto, near Lake Chirie <51-lower r.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.15 (SAPS); Kitashiretoko-hanto, Mt. Hokke-yama <51-lower r.>, Hoshino, Y., 1933.07.22 (SAPS); Kitashiretoko-hanto, Lake Nataruba <51-lower r. ?>, Hoshino, Y., 1933.07.26 (SAPS); Kashipo, Somayoi <54-lower l. ?>, Takee, G., Abumiya, H. & Hosino, Y., 1932.07.20 (SAPS).

SOUTH. E. Coast, Mt. Tosso <57-lower l.>, Hiratsuka, N., Iwadare, S. & Nagai, M., 1927.07.23 (SAPS); Motodomari-shicho, Mt. Tosso-zan <57-lower l.>, Honda, M. & Kimura, Y., 1940.08.12 (TI); About 5km SW of Vostochnyy, Pugacheva <57-lower l.>, Takahashi, H. 31062, 2003.07.25 (SAPS); W. Coast, Kusunnai <58-upper r.>, Miyake, T., 1906.07.07 (SAPS); E. Coast, Chikaporonai <59-upper l.>, Miyake, T., 1907.08.15 (SAPS); Aihama (Tokyo Univ. Forest) <61-upper r.>, Imazeki, R., 1941.07.13 (TNS 80666); Toyohara-gun, Toyokita-mura <62-lower l.>, Sase, H., 1937.08.05 (SAPS- 2 sheets); Sokol <62-lower l.>, Fukuda, T. 1030, 2001.07.17 (SAPS); 20km E of Sokol town, mouth of Bakhura River <62-lower r.>, Takahashi, H. 29093, 2001.07.19 (SAPS- 2 sheets); 20km SE of Dolinsk <62-lower r.>, Takahashi, H. 30111, 2002.07.31 (SAPS- 2 sheets); W. Coast, Semantomari <63-upper r.>, Miyake, T., 1906.07.03 (SAPS); Shimizu <64-upper l.>, Miyake, T., 1906.06.30 (SAPS); Toyohara <65-upper l.>, Muramatsu, S. 976, 977, 1923.07.06 (TI); Toyohara <65-upper l.>, Hara, H., 1931.07.30 (TI); Toyohara <65-upper l.>, Hara, H., 1936.07.28 (TI- 3 sheets); Toyohara <65-upper l.>, Koidzumi, G., 1940.08.14 (KYO- 3 sheets); Approx. 50km SE of Yuzhno-Sakhalinsk, N of Tunaicha Lake <66-lower l.>, Takahashi, H. 29520, 2001.07.29 (SAPS); Aniwa Bay, Korssakoff <70-upper r.>, Miyake, T., 1906.06.19 (SAPS); Korssakoff <70-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.12 (SAPS); Korssakoff <70-upper r.>, Miyabe, K. & Miyagi, T., 1906.08.04 (SAPS); Korsakof <70-upper r.>, Faurie, U. 388, 1908.09 (KYO- 2 sheets); Ohdomari <70-upper

r.>, Saito, S., 1929.07.24 (TI); Chipisani <71-upper l.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.15 (SAPS); Naionnai <72-lower l.>, Miyabe, K. & Miyagi, T., 1906.08.01 (SAPS); Todomoshiri, Tomarizawa <73-lower l.>, Miyake, T., 1906.07.23 (SAPS); Todomoshiri, Mt. Dainan <73-lower l.>, Miyake, T., 1906.07.26 (SAPS); Isl. Kaibato, Kamomegawa <73-lower l.>, Kimoto, Murayama & Takee, 1931.07.29 (SAPS).

#### <THE KURILS>

NORTH. ATLASOVA <01>. Uomizaki, Ito, S. & Komori, G., 1926.08.04 (SAPS). SHUMSHU <02>. No locality, Yendo, K., 1903.08 (TI); Near Shiraiwa, Kojima, K. 1335, 1932.08 (TNS 182826); S of Pochtareva Cape, Takahashi, H. 23321, 1997.08.08 (SAPS). PARAMUSHIR <03>. Otmari, Tarao, C., 1892.08.15 (SAPS); Arakawa, Kudo, Y. 5359, 1920.07.15 (SAPS); Foot of Mt. Sannohe, Koidzumi, H. 39668, 1932.08.10 (TNS 908674); Arakawa, Ohwi, J. & Yoshii, R. 6246, 1934.08.14 (KYO); Paramushir, 5km S of Severo-Kuril'sk, Takahashi, H. 20829, 1996.08.01 (SAPS- 2 sheets); E side of Vasil'yeva Bay, Takahashi, H. 20909, 1996.08.03 (SAPS); S of Savushkina Cape, Takahashi, H. 23029, 1997.08.04 (SAPS). ANTSIFEROVA <04>. NW of the island, Takahashi, H. 23801, 1997.08.15 (SAPS).

MIDDLE. KHARIMKOTAN <07>. Inland from Severgina Bay, Takahashi, H. 21521, 1996.08.08 (SAPS- 2 sheets). EKARMA <09>. E of Cape Shpilevoy, Takahashi, H. 21658, 1996.08.10 (SAPS). RAIKOKE <11>. E side of the island, Takahashi, H. 21875, 1996.08.13 (SAPS- 2 sheets). MATUA <12>. Banjo-jima, Tatewaki, M. & Tokunaga, Y. 12286, 1928.09.07 (SAPS); Inland from Dvoynaya Bay, Takahashi, H. 21950, 1996.08.14 (SAPS- 2 sheets). RASSHUA <13>. Mikasa, Tatewaki, M. & Tokunaga, Y. 12364, 1928.08.06 (SAPS); Sonrakuwan, Tatewaki, M. & Takahashi, K. 15287, 1929.08.09 (SAPS); Yoriki-hama, Takahashi, H. 19069, 1995.08.12 (SAPS- 2 sheets). USHISHIR-YANKICHA <14b>. Near Onsen-wan, Tatewaki, M. & Takahashi, K. 15838, 1929.09.10 (SAPS); Kraternaya Bay, Takahashi, H. 19283, 1995.08.14 (SAPS- 2 sheets). KETOI <15>. No locality, Nishida, T., 1928.05.06 (SAPS); Near Shimizugawa, Tatewaki, M. & Takahashi, K. 15656, 1929.08.30 (SAPS); Cape Storozheva, Takahashi, H. 19415, 1995.08.15 (SAPS). CHIRPOI <18a>. Peschanaya Bay, Takahashi, H. 19788, 1995.08.23 (SAPS). BRAT CHIRPOEV <18b>. W of Samotuga Cape, Takahashi, H. 24091, 1997.08.20 (SAPS); Uglovaya Bay, Takahashi, H. 28436, 2000.08.04 (SAPS). URUP <19>. Anama-Yoshino-hama, Uchida, K., 1891.06.17 (SAPS); Yoshinohama, Uchida, K., 1891.06.18 (SAPS); Near Onsenzaki, Tatewaki, M. 10053, 1927.09.09 (SAPS); Otkrytyy Bay, Takahashi, H. 18414, 1995.08.04 (SAPS- 2 sheets); Inland from Ukromnaya Bay, Takahashi, H. 22105, 1996.08.20 (SAPS).

SOUTH. ITURUP <20>. Mt. Atoiya, Kondo, K., 1927.07.21 (TI); Sokiya-Shibetoru, Saito, S.,

1928.08.08 (TI); Shana, Yoshimura, B., 1937.08.07 (SAPS). KUNASHIR <21>. Chachanupuri, Kondo, K. (2389), 1929.07.20 (TI- 3 sheets, TNS 716820); River Onnebetsu, Kondo, K., 1929.07.26 (TI); Mt. Chacha-nupuri, Okada, Y., 1929.08.03 (TNS 386273); Shiranuka-Chinomichi, Nagai, M. & Shimamura, M., 1929.08.05 (SAPS); Rurui, Shirahama, K. & Takahashi, Y., 1935.07.20 (SAPS). SHIKOTAN <22>. No locality, Kawakami, T., 1898.08 (TI); No locality, Kondo, K. 7910, 1927.08.11 (TI); Riv. Notoro, Ohwi, J., 1931.08.09 (KYO); Shakotan-Kagenoma, Ohwi, J., 1931.08.31 (KYO).

**18. *Hydrocotyle ramiflora* Maxim. [Ō-chidome]**  
[No specimens in Japanese herbaria]

**19. *Ligusticum scoticum* L. [Maruba-tōki]**  
<SAKHALIN>

NORTH. N. Sakhalin, Asukasai <?>, Okada, 1923.08.30 (TI); W coast of Peninsula Schmidt <04-lower l.>, Fukuda, T. 1859, 2001.08.09 (SAPS); N coast of Peninsula Schmidt <04-upper r.>, Fukuda, T. 1613, 2001.08.05 (SAPS); N coast of Peninsula Schmidt <05-upper l.>, Fukuda, T. 1832, 2001.08.08 (SAPS); S of Peninsula Schmidt, E coast <05-lower r.>, Fukuda, T. 2185, 2001.08.16 (SAPS); N end of Gulf Pomr' <07-upper l.>, Fukuda, T. 1890, 2001.08.10 (SAPS); N. Sakhalin, Urta-wan <07-lower r.>, Kudo, Y. & Ishida, B. 7252, 1923.09.01 (SAPS).

MIDDLE. Alexandrovski <28-lower l.>, Takamatsu, M., 1905.07.30 (SAPS); N. Sakhalin, Ako <28-lower l.>, Kudo, Y. & Tatewaki, M. 6018, 1922.07.23 (SAPS); Sokorai <36-lower l.>, Miyabe, K. & Miyagi, T., 1906.08.13 (SAPS); Pilewo <36-lower l.>, Miyabe, K. & Miyagi, T., 1906.08.13 (SAPS); N. Sakhalin, Hantuza <37-lower r.>, Okada, 1923.08.31 (TI); E. Coast, Kokkyo, Asase <40-lower l.>, Hoshino, Y. & Sugiyama, S., 1933.08.11 (SAPS); Shikka Distr., Chirikoro <45-upper r.>, Yoshimura, B., 1936.08.06 (SAPS- type specimen of f. *incisa* Miyabe & Tatewaki); Nayoshi-gun, Kitakozawa <46-upper l.>, Henmi, M., 1941.09.15 (TNS 631302, 631301, 631300); E. Coast, Ehorokofunai <48-lower l.>, Miyake, T., 1906.08.11 (SAPS); E. Coast, Nayoro <48-lower l.>, Miyake, T., 1906.09.06 (SAPS); Tomarikishi-kaigan <48-lower l.>, Chono, T., 1928.07.20 (TNS 253567); Shikka <48-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.23 (SAPS); Telpenia Bay, Shikka <48-upper r.>, Miyake, T., 1906.08.12 (SAPS); Shisuka <48-upper r.>, Namikawa, I., 1914.08.07 (SAPS); Siska <48-upper r.>, Sawada, T., 1923.08.14 (TI); Shikka <48-upper r.>, Otani, H. & Imai, Y., 1930.07.18 (SAPS); Shikka <48-upper r.>, Kitamura, S., 1930.08.20 (KYO); Taraika River <49-upper l.>, Hara, H. (C1065), 1931.08.03 (TI); Taraika <49-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.27 (SAPS); Jimutaki <50-upper r.>, Miyabe, K. & Miyagi, T., 1906.07.24 (SAPS); Kitashiretoko-hanto, Noto <51-lower l.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.12 (SAPS); Kitashiretoko-hanto, Chirie <51-lower r.>, Hoshino,

Y., Okada, S. & Sugiyama, S., 1933.07.15 (SAPS); Kitashiretoko-hanto, Kitafunakoshi <51-lower r.>, Hoshino, Y. & Sugiyama, S., 1933.07.23 (SAPS); Chirie <51-lower r.>, Sugawara, S. 16946, 1935.07.29 (SAPT); Ushiro-mura, near Kotan <52-upper l.>, Hara, H., 1936.07.30 (TI); Kitashiretoko-hanto, near Enton <55-upper l.>, Hoshino, Y., 1933.07.21 (SAPS); Kitashiretoko-hanto, Yoman-Rosoku-iwa <55-upper r.>, Okada, S. & Sugiyama, S., 1933.07.21 (SAPS); Kitashiretoko-hanto, Kitashiretoko-misaki <55-lower r.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.20 (SAPS).

SOUTH. W. Coast, Raichisuka <56-upper l.>, Miyake, T., 1907.09.06 (SAPS); W. Coast, N of Krasnogorsk, SE of Aynskoye Lake <56-upper l.>, Yabe, M., 2001.07.22 (SAPS); Makunkotan <57-lower l.>, Miyabe, K. & Miyagi, T., 1906.07.22 (SAPS); E. Coast, Mt. Tosso <57-lower l.>, Hiratsuka, N., Iwaware, S. & Nagai, M., 1927.07.23 (SAPS); Mt. Tosso <57-lower l.>, Hiratsuka, N., 1927.07.23 (TI); Approx. 80km N of Dolinsk, Tsapko <57-lower l.>, Takahashi, H. 29541, 2001.08.01 (SAPS); About 5km SW of Vostochnyy, Pugacheva <57-lower l.>, Takahashi, H. 31065, 2003.07.25 (SAPS); About 5km SW of Vostochnyy, Pugacheva <57-lower l.>, Inoue, K. 3045, 2003.07.25 (SAPS); About 5km SW of Vostochnyy, Pugacheva <57-lower l.>, Inoue, K. 3007, 2003.07.25 (SAPS); Seaside of Kashipo <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.07.24 (SAPS); W. Coast, SW of Penzenskoye <58-upper l.>, Yabe, M., 2001.07.24 (SAPS); Kusunnai <58-upper r.>, Miyabe, K. & Miyagi, T., 1906.08.09 (SAPS); E. Coast, Chikaporonai <59-upper l.>, Miyake, T., 1907.08.15 (SAPS); Tofutsu <60-upper l.>, Hara, H. (183c), 1928.08.15 (TI); Habomai, sea coast <60-lower l.>, Hara, H. (183a), 1928.08.15 (TI); W. Coast, Habomai-gen'ya <60-lower l.>, Kurushima, S., 1930.09 (TI); E. Coast, Naibuchi <62-upper l.>, Miyake, T., 1906.09.26 (SAPS); Naibuchi <62-upper l.>, Komatsu, S., 1913.08.02 (TI); Sakaehama <62-upper l.>, Hara, H. (C972), 1931.07.31 (TI- 2 sheets); E. Coast, near mouth of River Naiba <62-upper l.>, Fukuda, T. 2576, 2001.07.23 (SAPS); Naibuchi River, near Ochiai <62-lower l.>, Narita, Y., 1923.08.25 (TI); E. Coast, Rore <62-upper r.>, Miyake, T., 1906.09.27 (SAPS); 20km E of Sokol town, mouth of Bakhura River <62-lower r.>, Takahashi, H. 29094, 2001.07.19 (SAPS); Maoka-cho, Kumekomai <63-upper r.>, Mizukoshi, 1926.07.31 (TNS 014022); Maoka-cho, Arakai <63-upper r.>, Mizukoshi, 1926.08.03 (TNS 014021); Maoka-cho, Shinkan-yama <63-upper r.>, Maekawa, M. (Koidzumi, H. 112804), 1942.08.15 (TNS 903714); Solowiyohuka <65-lower l.>, Miyake, T., 1906.10.12 (SAPS); Kaizuka <65-lower l.>, Hara, H. (183b), 1928.08.17 (TI); Kaizuka <65-lower l.>, Koidzumi, G., 1930.08.08 (KYO); Aniwa Bay, Korssakoff <70-upper r.>, Miyake, T., 1906.06.19 (SAPS); Mereya <70-upper r.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.14 (SAPS); Korsakof <70-upper r.>, Faurie, U. 382, 1908.09 (KYO- 3 sheets); Otomari

<70-upper r.>, Muramatsu, S., 1923.07.04 (TI); Otomari <70-upper r.>, Narita, Y., 1923.08.20 (TI); Otomari <70-upper r.>, Hara, H. (183e), 1928.08.12 (TI); Otomari <70-upper r.>, Hara, H. (183d), 1928.08.17 (TI); 10km E of Korsakov, Prigorodnoye <70-upper r.>, Takahashi, H. 30586, 2002.08.15 (SAPS); 10km E of Korsakov, Prigorodnoye <70-upper r.>, Fujii, N. F01394, 2002.08.15 (SAPS); Prigorodnoye, E side of River Mereya <70-upper r.>, Fujii, N. F01433, 2002.08.16 (SAPS); Chipisani <71-upper l.>, Nakahara, G., 1906.08 (TI); E of Korsakov, Ozerskiy village <71-upper l.>, Fukuda, T. 1355, 2001.07.28 (SAPS); Yenbuchi, lake-side <71-upper r.>, Ohta, 1925.08.05 (SAPS); Nagahama-gun, Enbuchi-mura <71-upper r.>, Sase, H., 1935.09.15 (SAPS); Cap. Notoro <73-lower l.>, Miyabe, K. & Miyagi, T., 1906.07.19 (SAPS); Todomoshiri, Dainanwan <73-lower l.>, Miyake, T., 1906.07.23 (SAPS); Shiranushi <73-lower l.>, Miyabe, K. & Miyagi, T., 1906.08.07 (SAPS); Isl. Kaibato <73-lower l.>, Komat, S., 1915.08.12 (TI); Isl. Kaibato, Tomarisara <73-lower l.>, Kimoto, Murayama & Takee, 1931.07.22 (SAPS).

[No locality] Narita, Y., 1923.08 (TI); Komatsu, no date (TI).

#### <THE KURILS>

NORTH. ATLASOVA <01>. Sekinezaki, Ito, S. & Komori, G., 1926.07.06 (SAPS); Minamiura, Ito, S. & Komori, G., 1926.08.10 (SAPS); Minamiura, Ohwi, J. & Yoshii, R. 5859, 1934.07.31 (KYO); Alaidskaya Bay, Takahashi, H. 23664, 1997.08.12 (SAPS). SHUMSHU <02>. Near Bettobu, Yokoyama, S., 1893.09.22 (SAPS); No locality, Ishikawa, T., 1894.06.29 (SAPS- 2 sheets); No locality, Hoko-gikai, 1895 (SAPS); No locality, Gunji, S., 1897 (SAPS); No locality, Yendo, K., 1903.08 (TNS 24185); No locality, Yendo, K., 1903.08.17 (TI); No locality, Yendo, K., 1903.08.18 (TI); Kokutan-zaki-Numajiri, Okada, Y., 1931.08.17 (TNS 306772); S of Pochtareva Cape, Takahashi, H. 23214, 1997.08.08 (SAPS); N of Bol'shoje Lake, Takahashi, H. 23412, 1997.08.09 (SAPS). PARAMUSHIR <03>. Otmai, Tarao, C., 1892.08.15 (SAPS); Kashiwabarawan, Kudo, Y. 5057, 1920.07.09 (SAPS); Yotsuiwahana, Kudo, Y. 5175, 1920.07.12 (SAPS); Arakawa, Kudo, Y. 5360, 1920.07.15 (SAPS); Hiratozaki, Kudo, Y. 5393, 1920.07.21 (SAPS); Shirakawa, Kudo, Y. 5602, 1920.07.30 (SAPS); No locality, Koidzumi, H. 87798, 1924.08 (TNS 917911); No locality, Ohashi, T., 1932.08 (KYO); Nishikawa, Ohwi, J. & Yoshii, R. 6144, 1934.08.10 (KYO); 5km S of Severo-Kuril'sk, Takahashi, H. 20703, 1996.08.01 (SAPS- 2 sheets); E side of Vasil'yeva Bay, Takahashi, H. 21078, 1996.08.03 (SAPS); S of Savushkina Cape, Takahashi, H. 23009, 1997.08.04 (SAPS). ANTSIFEROVA <04>. NW of the island, Takahashi, H. 23788, 1997.08.15 (SAPS); NW of the island, Takahashi, H. 23796, 1997.08.15 (SAPS).

MIDDLE. MAKANRUSHI <05>. No locality, Tatewaki, M. 11288, 1928.08.09 (SAPS); Inland of Zakat Bay, Takahashi, H. 23931, 1997.08.18 (SAPS). ONEKOTAN <06>. Nemo, Tatewaki, M. 11003, 1928.08.08 (SAPS); Nemo Bay, Takahashi,

H. 21167, 1996.08.04 (SAPS); Onekotan, SW part of the island, Takahashi, H. 21290, 1996.08.05 (SAPS). KHARIMKOTAN <07>. Inland from Severgina Bay, Takahashi, H. 21503, 1996.08.08 (SAPS). CHIRINKOTAN <08>. E of Cape Ptichy, Takahashi, H. 21597, 1996.08.10 (SAPS). SHIASHKOTAN <10>. Ishikawa, T., 1894.06.23 (SAPS- 2 sheets); Zakatnaya Bay, Takahashi, H. 21748, 1996.08.11 (SAPS). RAIKOKE <11>. E side of the island, Takahashi, H. 21865, 1996.08.13 (SAPS). MATUA <12>. No locality, Cap. Uzawa, 1927.09.02 (SAPS); Inland from Dvoynaya Bay, Takahashi, H. 22024, 1996.08.14 (SAPS). RASSHUA <13>. Mikasa, Tatewaki, M. & Tokunaga, Y. 12415, 1928.08.06 (SAPS); Yoriki-hama, Takahashi, H. 19072, 1995.08.12 (SAPS). USHISHIR-RYPONKICHA <14a>. SW side, Takahashi, H. 22940, 1997.08.02 (SAPS). USHISHIR-YANKICHA <14b>. Kraternaya Bay, Takahashi, H. 19271, 1995.08.14 (SAPS). KETOI <15>. No locality, Tatewaki, M. & Tokunaga, Y. 11519, 1928.09.01 (SAPS); Near Ishikuzurehama, Tatewaki, M. & Takahashi, K. 15395, 1929.08.17 (SAPS); Cape Storozheva, Takahashi, H. 19350, 1995.08.15 (SAPS). SIMUSHIR <16>. Kitoboynaya Bay, Takahashi, H. 18931, 1995.08.10 (SAPS). CHIRPOI <18a>. Peschanaya Bay, Takahashi, H. 19789, 1995.08.23 (SAPS). BRAT CHIRPOEV <18b>. No locality, Tarao, C., 1892.06.18 (SAPS); W of Samotuga Cape, Takahashi, H. 24094, 1997.08.20 (SAPS); Uglovaya Bay, Takahashi, H. 28525, 2000.08.04 (SAPS). URUP <19>. Tokotan, Jimbo, K., 1891.06.15-30 (SAPS); Tokotan, Uchida, K., 1891.06.16 (SAPS); E of Ahuruimoi, Jimbo, K., 1891.06.25 (SAPS); Tokotan, Ishikawa, T., 1894.07.23 (SAPS); Kobune, Tatewaki, M. 9869, 1927.08.26 (SAPS); Tokotan, lake-side, Tatewaki, M. 10024, 1927.08.28 (SAPS); Otkrytyy Bay, Takahashi, H. 18409, 1995.08.04 (SAPS); Inland from Ukromnaya Bay, Takahashi, H. 22100, 1996.08.20 (SAPS- 3 sheets).

SOUTH. ITURUP <20>. Shana, Fujimura, S., 1890.08 (SAPS); Onnebetsu, Ishikawa, T., 1890.08.07 (SAPS); Rubetsu-mura, Naibo, Yokoyama, S., 1893.07.03 (SAPS); Rubetsu, Kawakami, T., 1898.09 (TI); Bettoufu, Miura, K., 1906.07.16 (SAPS); Toro, Miura, K., 1906.07.24 (SAPS); Mt. Moyoro, Tanaka, G. & Miyabe, Ken., 1910.07.17 (SAPS); Moyoro coast, Tanaka, G. & Miyabe, Ken., 1910.07.18 (SAPS); Shibetoro–Moyoro, Tanaka, G. & Miyabe, Ken., 1910.07.18 (SAPS); Shamanbe, Kondo, K., 1927.07.14-15 (TI); Shibetoru, Saito, S., 1928.08.10 (TI); Rubetsu-kaigan, Koidzumi, H. 24945, 1930.08.06 (TNS 917828); Shana, Yoshimura, B., 1937.08.07 (SAPS); Settlement Kitovyy, Ilyushko, M. & Zhuravlev, Y., 1995.08.03 (SAPS- 4 sheets). KUNASHIR <21>. Seseki, Tatewaki, M. 3107, 1923.07.20 (SAPS, SAPT); Nikishiro, Tatewaki, M. 3443, 1923.07.27 (SAPS); Furukamappu, Osaki, Wakamatsu, 1923.09.03 (SAPS); Chinomichi, Kondo, K., 1929.07.24 (TI); Sainokawara, Nagai, M. & Shimamura, M., 1929.07.29 (SAPS); Cape Atoiya, Nagai, M. & Shimamura, M., 1929.08.03

(SAPS- 2 sheets); Shiranuka–Chinomichi, Nagai, M. & Shimamura, M., 1929.08.05 (SAPS); Tomari, Ohtani, H., 1929.08.09 (SAPS); Nikishiro, Nagai, M. & Shimamura, M., 1929.08.13 (SAPS); Furukamappu, Matsumura, Y., 1930.07.20 (KYO); Seseki, Matsumura, Y., 1930.07.24 (KYO); Mt. Rurui-dake, Koriba, M. & Yoshii, R., 1933.07.31 (KYO); No locality, collector unknown, 1935 (KYO); Kotankeshi, Tatewaki, M. 25542, 1936.08.20 (SAPS); Around Yuzhno-Kuril'skiy, Ilyushko, M. & Zhuravlev, Y., 1995.08.02 (SAPS- 2 sheets). SHIKOTAN <22>. No locality, Kawakami, T., 1898.08 (TI); Debari, Takeda, H., 1909.07.26 (SAPS); Tokkarimasuba, Takeda, H., 1909.07.28 (TNS 29735); Shakotan, Tanaka, G. & Miyabe, Ken., 1910.08.10 (SAPS); No locality, Abe, A., 1924.07.17 (TNS 429821, 429819, 429818); Mt. Shakotan, Saito, S., 1925.09 (TI); Shakotan harbor, Saito, S., 1925.09.01 (TI); Shakotan-Horobetsu, Saito, S., 1925.09.04 (TI); No locality, Kondo, K. 6037, 1927.08.11 (TI, TNS 643066); Mt. Shakotan, Kondo, K., 1929.08.06 (TI); Anama, Kondo, K., 1929.08.28 (TI- 2 sheets); Chiboi–Umanose, Kondo, K., 1929.09.07 (TI); Notoro, Ohwi, J., 1931.08.08 (KYO); Shakotan–Kagenoma, Ohwi, J., 1931.08.31 (KYO). HABOMAIS <23>. Isl. Taraku, Kondo, K., 1929.08.24 (TI); Isl. Yuru, Kondo, K., 1929.08.24 (TI).

## 20. *Oenanthe javanica* (Blume) DC. [Seri] <SAKHALIN>

SOUTH. Toyohara-gun, Toyokita-mura <62-lower l. ~ 65-upper l.>, Sase, H., 1937.09.07 (SAPS); Honto <63-lower l.>, Saito, S. 999, 1929.08.24 (TI); Toyohara <65-upper l.>, Sugawara, S. 16953, 1936.09.23 (SAPT); Okusuzuya <65-upper l.>, Sugawara, S. 16954, 1938.07.10 (SAPT); Otomari <70-upper r.>, Hara, H., 1928.08.17 (TI); Isl. Kaiba-to <73-lower l.>, Morimoto (Sugawara 16955), 1930.07.10 (SAPT); Moneron Isl. <73-lower l.>, Stepanova, K. & Voroschilov, V., 1974.08.01 (TNS 9025148); Isand Moneron <73-lower l.>, Barkalov, V.Y. 11154, 2001.08.23 (SAPS).

## <THE KURILS>

SOUTH. ITURUP <20>. Seseki, Kawakami, T., 1898.09 (TI); Seseki, Kawakami, T., 1898.09.09 (SAPS); No locality, Koidzumi, H. 87765, 1924.09.07 (TNS 912358); Rubetsu, Saito, S. 6257, 1928.09.03 (TI- 2 sheets, TNS 643746); Shana, Yoshimura, B. & Yokoyama, H., 1938.08.11 (SAPS). KUNASHIR <21>. Tomari-mura, near Zenbekotan, Tanaka, H., 1895 (SAPS); Kaikaramui, Tatewaki, M. 3226, 1923.07.22 (SAPS, SAPT); Near Lake Ichibishinai, Ponto, Tatewaki, M. 25469, 1936.08.20 (SAPS); Rausu-misaki, Tanaka, Nakano, Isida, Hara & Otani, 1939.08.14 (SAPS).

## 21. *Osmorhiza aristata* (Thunb.) Rydb. [Yabu-ninjin] <SAKHALIN>

MIDDLE. Anbetsu <36-lower l.>, Ishii (Sugawara 16961), 1943.06.13 (SAPT); Nayoshi-gun, Kitakozawa <46-upper l.>, Henmi, M., 1943.06.12 (TNS 631322, 631320, 631321); Mt. Shikka-dake <47-upper l.>,

Sugawara, S. 16962, 1934.07.16 (SAPT); Shikka <48-upper r.>, Sugawara, S. 16963, 1927.08.03 (SAPT); Mt. Kamabuse-yama <52-lower r.>, Sugawara, S. 16960, 1934.08.10 (SAPT); Shiritoru <54-lower l.>, Sugawara, S. 16964, 1927.08.02 (SAPT); Kashipo, Somayoi <54-lower l. ?>, Takee, G., Abumiya, H. & Hosino, Y., 1932.07.20 (SAPS).

SOUTH. E. Coast, Makunkotan <57-lower l.>, Miyake, T., 1906.09.15 (SAPS); E. Coast, Nupuripo <57-lower l.>, Miyake, T., 1906.09.18 (SAPS); E. Coast, Mt. Tosso <57-lower l.>, Hiratsuka, N., Iwadare, S. & Nagai, M., 1927.07.23 (SAPS); Approx. 89km N of Dolinsk, Tsapko–N peak of Mt. Vladimirovka <57-lower l.>, Takahashi, H. 29585, 2001.08.02 (SAPS); Mt. Kashipo-yama <57-upper r.>, Sugawara, S. 16965, 1931.06.20 (SAPT); University Forest, Odasamu <59-lower l.>, Suematsu, S., 1929.07.21 (TI); Fukakusa <61-lower r.>, Sugawara, S. 16968, 1921.07.10 (SAPT); Miho <61-lower r.>, Sugawara, S. 16967, 1922.07.20 (SAPT); Ochiai <62-lower l.>, Sugawara, S. 16966, 1921.09.02 (SAPT); Dolinsk region, Sokol <62-lower l.>, Barkalov, V.Y. 2659, 2002.08.15 (SAPS); E of Dolinsk, along River Anna <62-lower r.>, Fukuda, T. 2424, 2001.08.27 (SAPS); 20km SE of Dolinsk <62-lower r.>, Takahashi, H. 30105, 2002.07.31 (SAPS); W. Coast, Mt. Mauka <63-upper r.>, Miyake, T., 1907.06.04 (SAPS); Takinosawa <64-upper r.>, Miyake, T., 1906.06.29 (SAPS); Sussuja <65-upper l.>, Sugawara, S., 1928.07 (KYO); Aniwa Bay, Sorowiyofuka <65-lower l.>, Miyake, T., 1907.07.16 (SAPS); Mt. Susuya <65-upper r.>, Miyake, T., 1907.07.27 (SAPS); Merea <70-upper r.>, Nakahara, G., 1906.08 (TI).

#### <THE KURILS>

SOUTH. ITURUP <20>. Naibo, Kawakami, T., 1898.09 (TI); Sokiya–Shibetoru, Saito, S. 4018, 1928.08.08 (TI- 2 sheets, TNS 717131); Rubetsu village, mouth of Naibo River–Iribushi, Azuma, T. & al. 3260, 2002.06.19 (SAPT). KUNASHIR <21>. Nikishiro-sando, Tatewaki, M. 3425, 1923.07.27 (SAPS); Furukamappu–Nikishiro, Matsumura, Y., 1930.07.21 (KYO); No locality, collector unknown, 1935 (KYO).

## 22. *Peucedanum terebinthaceum* (Fisch. ex Spreng.)

Fisch. ex Turcz. [Kawara-bōhū]

#### <SAKHALIN>

MIDDLE. Sokorai <36-lower l.>, Miyabe, K. & Miyagi, T., 1906.08.13 (SAPS); Anbetsu <36-lower l.>, Sugawara, S. 17000, 1933.08.13 (SAPT); Nayoshi-gun, Nayoshi-mura, Oyau <36-lower l.>, Koidzumi, G., 1940.08.20 (KYO- 2 sheets); Shikka-shicho, Mt. Sekkai-yama <39-lower l.>, Yoshimura, B. & Hara, M., 1937.07.15 (SAPS); Nayoshi-gun, Yokunai <41-upper l.>, Hara, H., 1936.08.01 (TI- 2 sheets); Kitanayoshi <41-lower l.>, Sugawara, S. 17003, 1943.06.20 (SAPT); Mt. Mimizuku-yama <42-lower r.>, Tobita, H., 1926.07.10 (KYO); Mt. Horoto <42-lower r. ?>, Nagamatsu, 1930.07.26 (KYO); Shikka, Chirikoro-ichishiryu <45-upper r.>,

Sugawara, S. 27724, 1935.08.02 (SAPS); Shikka, Mt. Kawashima-yama <45-upper r.>, Sugawara, S. 29041, 1935.08.03 (SAPS); Shikka Distr., Mt. Chonosuke <45-upper r. ? >, Yoshimura, B., 1936.08.10 (SAPS- 2 sheets); Mt. Shikka-dake <47-upper l.>, Sugawara, S. 16994, 1934.07.16 (SAPT); Upstream of Niitōi River <47-lower l.>, Sugawara, S. 16998, 1934.07.21 (SAPT); S. Sakhalin, Anbetsu <47-upper r.>, Tokunaga, Y. & Kawai, K., 1929.09.02 (SAPS); Apporx. 25km W of Poronaysk, Leonidovka River <47-upper r.>, Takahashi, H. 29610, 2001.08.03 (SAPS); Tomarikishi <48-lower l.>, Ban, S., no date (KYO); S. Sakhalin, Shikka-shicho, Motomari <51-upper l.>, Hoshino, Y. & Sugiyama, S., 1933.08.03 (SAPS); Shikka-shicho, Karuho – Chirie <51-lower r.>, Kawashima, M., 1935.08.15 (SAPS); Mt. Isara-yama <52-lower l.>, Sugawara, S. 16995, 1934.08 (SAPT); Shiritori <54-lower l.>, Sugawara, S. 1, 1927.08.07 (SAPS).

SOUTH. Mt. Kashipo, peak <57-upper r.>, Koidzumi, H. 21390, 1929.08.01 (TNS 900536); Mt. Kashipo, rocky mountain <57-upper r.>, Koidzumi, H. 21386, 1929.08.01 (TNS 920098); Shiritori, Ishiyama <57-upper r.>, Hara, H. (C741a, b), 1931.08.04 (TI- 2 sheets); S. Sakhalin, Mt. Kashipo <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.07.22 (SAPS); Mt. Kashipo <57-upper r.>, Ohwi, J., 1932.08.18 (KYO); Mt. Kashipo-dake <57-upper r.>, Sugawara, S. 16999, 1935.08 (SAPT); 115km N of Dolinsk, Mt. Ostrovskaya <57-upper r.>, Fujii, N. F01129, 2002.08.03 (SAPS); 115km N of Dolinsk, Mt. Ostrovskaya <57-upper r.>, Takahashi, H. 30196, 2002.08.03 (SAPS).

#### <THE KURILS>

NORTH. PARAMUSHIR <03>. No locality, Koidzumi, H. 87799, 1924.08 (TNS 918172).

SOUTH. ITURUP <20>. Shana–Sashiusu, Saito, S., 1928.08.20-2 (TI). KUNASHIR <21>. Kometogamura, Ichibishinai, Endo, C., 894.07.27 (SAPS); Nikishiro, Tatewaki, M. 3568, 1923.07.29 (SAPS). SHIKOTAN <22>. Shakotan, Miura, K., 1906.07.26 (SAPS- 2 sheets); Anama, Takeda, H., 1909.07.20 (SAPS); Shikotan, Anama, Arai, M., 1910.07.15 (SAPS); Anama, Kondo, K., 1929.08.28 (TI); Noto, Ohwi, J. 730, 1931.08.08 (TNS 234399); Noto, Ohwi, J., 1931.08.11 (KYO); Shakotan–Kagenoma, Kimura, A. & Kimura, H., 1933.08.06 (SAPS).

## 23. *Phlojodicarpus villosus* (Turcz. ex Fisch. et C.A.Mey.) Ledeb. [Takasu-zeri]

#### <SAKHALIN>

NORTH. N. Sakhalin, Ado <04-upper l.>, Kudo, Y. & Ishida, B. 7573, 1923.09.07 (SAPS); N coast of Peninsula Schmidt <05-upper l.>, Fukuda, T. 1777, 2001.08.07 (SAPS- 2 sheets); E coast, S of Peninsula Schmidt <05-lower r.>, Fukuda, T. 2146, 2001.08.16 (SAPS).

SOUTH. Miho, Mt. Kabuto-yama <61-lower l.>, Sugawara, S. 16940, 16941, 16942, 16943, 1932.08.24 (SAPT); A branch of Naibuchi River, on rocky cliffs <61-lower l.>, Sugawara, S., 1932.08.24 (KYO).

**24. *Pleurospermum austriacum* (L.) Hoffm. subsp. *uralense* (Hoffm.) Sommier [Ō-kasamochi]**

<SAKHALIN>

MIDDLE. N. Sakhalin, Pjlewo <36-lower l.>, Kudo, Y. & Tatewaki, M. 6107, 1922.07.29 (SAPS); Kokkyo, Anbetsu <36-lower l.>, Ishiyama, T., 1927.07.14 (SAPS); Nayoshi-gun, Yokunai <41-upper l.>, Hara, H., 1936.08.01 (TI- 2 sheets); Shikka-shicho, Chirie-gun, Chirikoro <45-upper r.>, Tatewaki, M. & Takahashi, Y. 22968, 1936.06.29 (SAPS); Nayoshi-gun, Kitakozawa <46-upper l.>, Henmi, M., 1942.08.09 (TNS 631307); E. Coast, Ehorokofunai <48-lower l.>, Miyake, T., 1906.08.11 (SAPS); E. Coast, Nayoro <48-lower l.>, Miyake, T., 1906.09.09 (SAPS); Shisuka <48-upper r.>, Namikawa, I., 1914.08.09 (SAPS); Kitashiretoko-hanto, Noto <51-lower l.>, Hoshino, Y. & Okada, S., 1933.07.12 (SAPS); Kitashiretoko-hanto, Yoman-Rosoku-iwa <55-upper r.>, Okada, S. & Sugiyama, S., 1933.07.21 (SAPS).

SOUTH. Kashipo, Tenbodai <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.08.10 (SAPS); E. Coast, Chikaporonai <59-upper l.>, Miyake, T., 1907.08.15 (SAPS); Fukakusa-mura <61-lower r.>, Koidzumi, H. 1331, 1921.08.20 (TNS 918206); Sakaehama <62-upper l.>, Saito, S. (365), 1929.07.28 (TI- 3 sheets, TNS 688127); Sakaehama <62-upper l.>, Hara, H. (C971a), 1931.07.31 (TI- 2 sheets); Sakaehama <62-upper l.>, Ex herb. Dr. T. Ito, no date (TNS 120240); Ochiai <62-lower l.>, Sugawara, S. 17030, 1927.08.15 (SAPT); 20km E of Sokol town, mouth of Bakhura River <62-lower r.>, Takahashi, H. 29108, 2001.07.19 (SAPS- 2 sheets); W. Coast, Mauka <63-upper r.>, Miyake, T., 1906.07.03 (SAPS); Ryutoka River <64-lower r.>, Nakahara, G., 1906.07.09 (TI- 2 sheets); Kaizuka <65-lower l.>, Sugawara, S. 8, 1927.07.03 (SAPS); Kaizuka <65-lower l.>, Sugawara, S. 17029, 1928.07.20 (SAPT); Kaizuka <65-lower l.>, Koidzumi, G., 1930.08.08 (KYO); Fukakusa <65-upper r.>, Sugawara, S. 35, 1924.08 (SAPS); Mt. Susuyadake <65-upper r.>, Sugawara, S. 17028, 1927.08.10 (SAPT); Tonnai-gun, Kamikiminai, Mt. Horoto-yama <65-upper r.>, Sase, H., 1939.08.30 (SAPS); Tonnai-gun, Kamikiminai <65-lower r.>, Sase, H., 1940.07.21 (SAPS); Aniwa Bay, Ootomari <70-upper r.>, Miyake, T., 1907.07.10 (SAPS); Korsakof <70-upper r.>, Faurie, U. 385, 1908.08 (KYO- 2 sheets); Korsakof <70-upper r.>, Faurie, U. 386, 1908.09 (KYO); Chipisani <71-upper l.>, Miyabe, K., Miyagi, T. & Miyake, T., 1906.07.15 (SAPS); Nagahama-gun, Enbuchimura <71-upper r.>, Sase, H., 1937.08.15 (SAPS); Todomoshiri, Tomarizawa <73-lower l.>, Miyake, T., 1906.07.23 (SAPS); Todomoshiri, Kotan <73-lower l.>, Miyake, T., 1906.07.24 (SAPS); Todomoshiri, Mt. Dainan <73-lower l.>, Miyake, T., 1906.07.26 (SAPS); Isl. Kaibato, Kita-kotan <73-lower l.>, Kimoto, Murayama & Takee, 1931.07.29 (SAPS).

<THE KURILS>

NORTH. SHUMSHU <02>. Babushkina Bay, Takahashi, H. 23581, 1997.08.10 (SAPS). PARAMUSHIR <03>. Kashiwabarawan, Kudo, Y.

5058, 1920.07.09 (SAPS); Nagaiwasaki, Kudo, Y. 5131, 1920.07.11 (SAPS); Ruesan, Kudo, Y. 5672, 1920.08.05 (SAPS); Suribachi-wan, Koidzumi, H. 40397, 1932.08.30 (TNS 911921); Ruesan, Tatewaki, M. 32683, 1941.07.29 (SAPS); S of Savushkina Cape, Takahashi, H. 23025, 1997.08.04 (SAPS); Turkharka Bay, Takahashi, H. 23919, 1997.08.17 (SAPS- 2 sheets).

MIDDLE. RASSHUA <13>. Mikasa, Tatewaki, M. & Tokunaga, Y. 12337, 1928.08.06 (SAPS); Nakadomari, Tatewaki, M. & Takahashi, K. 14955, 1929.08.03 (SAPS); S of Yoriki-hama, Takahashi, H. 19168, 1995.08.12 (SAPS). KETOI <15>. Near Ashizaki, Tatewaki, M. & Takahashi, K. 15453, 1929.08.18 (SAPS). SIMUSHIR <16>. Broton Bay, Tatewaki, M. & Tokunaga, Y. 11731, 1928.08.15 (SAPS); Malaya inlet, Takahashi, H. 19541, 1995.08.18 (SAPS). CHIRPOI <18a>. Peschanaya Bay, Takahashi, H. 19829, 1995.08.23 (SAPS). BRAT CHIRPOEV <18b>. W of Samotuga Cape, Takahashi, H. 24115, 1997.08.20 (SAPS); Ugl'ovaya Bay, Takahashi, H. 28452, 2000.08.04 (SAPS). URUP <19>. Iwanadomari, Uchida, K., 1891.06.17 (SAPS); Kobune, Tatewaki, M. 9858, 1927.08.26 (SAPS); Tokotan, Tatewaki, M. 10018, 1927.08.28 (SAPS); Mishima, Tatewaki, M. & Takahashi, K. 15974, 1929.07.24 (SAPS); Otkrytyy Bay, Takahashi, H. 18446, 1995.08.04 (SAPS); Inland from Ukromnaya Bay, Takahashi, H. 22134, 1996.08.20 (SAPS).

SOUTH. ITURUP <20>. Shibetoro-Moyoro, Tanaka, G. & Miyabe, Ken., 1910.07.18 (SAPS); Shamanbe, Kondo, K. 2312, 1927.07.14-15 (TI, TNS 716821); Shibetoru, Saito, S., 1928.08.10 (TI- 2 sheets); Porosu-Sokiya, Yoshimura, B. & Yokoyama, H., 1938.07.30 (SAPS); Shibetoro village, near mouth of Hiraitogawa River, Azuma, T. & al. 3017, 2002.06.13 (SAPT); Shana, Bettobi, Chishima-chosasho, no date (SAPS- 2 sheets). KUNASHIR <21>. Seseki, Tatewaki, M. (3075), 1923.07.20 (SAPS, SAPT); Atoiya, Nagai, M. & Shimamura, M., 1929.08.03 (SAPS- 3 sheets); Furukamappu-Nikishiro, Matsumura, Y., 1930.07.21 (KYO). SHIKOTAN <22>. Anama, Arai, M. 41, 1910.08.05 (SAPS); No locality, Abe, A., 1924.07.17 (TNS 429836); Shakotan, Kondo, K., 1929.08.04 (TI); Mt. Shakotan, Kondo, K., 1929.08.06 (TI); Chiboi-Umanose, Kondo, K., 1929.09.07 (TI); Notoro, Ohwi, J., 1931.08.11 (KYO); Umanose, Ohwi, J., 1931.08.30 (KYO).

**25. *Sanicula chinensis* Bunge [Umano-mitsuba]**

<SAKHALIN>

SOUTH. Soriofka <65-lower l.>, Faurie, U. 376, 1908.09.02 (KYO).

<THE KURILS>

SOUTH. KUNASHIR <21>. Furukamapp, Tatewaki, M. 3313, 1923.07.25 (SAPS); Shiranuka <21>, Nagai, M. & Shimamura, M., 1929.07.27 (SAPS); Shiranuka, Nagai, M. & Shimamura, M., 1929.07.30 (SAPS); Furukamappu-Nikishiro, Matsumura, Y.,

1930.07.21 (KYO); Furukamappu, Ohwi, J., 1930.08.20 (KYO); Rebaus, Shirahama, K. & Takahashi, Y., 1935.07.26 (SAPS); Kotankeshi, Chishima-chosajyo, no date (SAPS).

**26. *Seseli condensatum* (L.) Rchb.f.** [No Japanese name]

[No specimens in Japanese herbaria]

**27. *Sium suave* Walter** [Numa-zeri]

<SAKHALIN>

NORTH. N. Sakhalin, Pomeri-Moskaliwo <06-lower r.>, Kudo, Y. & Ishida, B. 7332, 1923.08.31 (SAPS); Ozhinskiy Region, Moskaliwo <06-lower r.>, Barkalov, V.Y. 10657, 2001.08.13 (SAPS).

MIDDLE. Poronai-mura <37-lower r.>, Miyake, T., 1906.08.29 (SAPS- 2 sheets); Shikka, Aba <48-upper l. ?>, Otani, H., 1930.07.31 (SAPS); Poronai <48-upper r.>, Nakahara, G., 1906.08 (TI- 2 sheets); Ramotteiuri <48-upper r.>, Miyake, T., 1906.08.15 (SAPS- 2 sheets); Shisuka <48-upper r.>, Namikawa, I., 1914.08.09 (SAPS); Dawait <49-upper l.>, Miyake, T., 1906.08.15 (SAPS); Taraika <49-upper r.>, Sugawara, S. 16862, 1927.08.03 (SAPT); Lake Solenuiya <51-lower r.>, Miyabe, K. & Miyagi, T., 1906.07.26 (SAPS); Kitashiretoko, Funakoshi <51-lower r.>, Sugawara, S. 17049, 1927.08.13 (SAPT); Kitashiretoko-hanto, Chirie <51-lower r.>, Hoshino, Y., Okada, S. & Sugiyama, S., 1933.07.15 (SAPS); Kitashiretoko-hanto, Kitafunakoshi <51-lower r.>, Hoshino, Y. & Sugiyama, S., 1933.07.23 (SAPS).

SOUTH. W. Coast, N of Krasnogorsk, SE of Aynskoye Lake <56-upper l.>, Yabe, M., 2001.07.22 (SAPS); About 5km SW of Vostochnyy, Pugacheva <57-lower l.>, Takahashi, H. 31085, 2003.07.25 (SAPS); About 5km SW of Vostochnyy, Pugacheva <57-lower l.>, Inoue, K. 3012, 2003.07.25 (SAPS); Kashipo <57-upper r.>, Miyake, T., 1906.09.12 (SAPS); E. Coast, Shikka, Kashipo <57-upper r.>, Miyake, T., 1906.09.14 (SAPS); Kashiho <57-upper r.>, Kitamura, S., 1930.08.25 (KYO); Kashipo, seaside <57-upper r.>, Takee, G., Abumiya, H. & Hosino, Y., 1932.07.30 (SAPS); E. Coast, Kusunnai <58-upper r.>, Miyake, T., 1906.09.21 (SAPS- 2 sheets); W. Coast, Kusunnai <58-upper r.>, Miyake, T., 1907.09.16 (SAPS- 2 sheets); Kushunnai <58-upper r.>, Saito, S., 1929.08.07 (TI); Tomarioro-gun, Kushun'nai-mura <58-upper r.>, Sase, H., 1937.09.10 (SAPS); Mt. Manui-yama, Dohozawa <59-upper l.>, Sugawara, S. 17050, 1926.08.06 (SAPT); Maoka-gun, Randomari, Habomai <60-lower l.>, Yamada, G., 1937.08.12 (KYO); Solowiyohuka <65-lower l.>, Miyabe, K. & Miyagi, T., 1906.08.23 (SAPS); Kaizuka <65-lower l.>, Koidzumi, G., 1930.08.08 (KYO); Tonaichan <66-lower l.>, Faurie, U. 375, 1908.09.18 (KYO- 2 sheets); Aniwa Bay, Chipisani <71-upper l.>, Miyake, T., 1908.07.19 (SAPS); About 8km SE of Ozerskiy, Arakul River <71-upper r.>, Takahashi, H. 30612, 2002.08.15 (SAPS).

<THE KURILS>

SOUTH. KUNASHIR <21>. Chinomichi, Koidzumi, H. 21817, 1929.08.13 (TNS 919932).

**28. *Sphallerocarpus gracilis* (Bess. ex Trev.) K.-Pol.** [Zūe-so]

<SAKHALIN>

MIDDLE. Handa <37-lower r.>, Sugawara, S. 17057, 17058, 17059, 1931.08.10 (SAPT).

**29. *Tilingia ajanensis* Regel** [Shirane-ninjin]

<SAKHALIN>

NORTH. E. Coast, S of Peninsula Schmidt <05-lower r.>, Fukuda, T. 2276, 2001.08.16 (SAPS); E. Coast, E of Gulf of Piltun, Vstrechnaya <11-upper l.>, Fukuda, T. 1509, 2001.08.04 (SAPS); N. Sakhalin, Chaio-kaigan <19-lower l.>, Kusano, Y., 1921.05.06 (SAPS); E. Coast, Chaio <19-lower l.>, Kusano, Y. (Koidzumi, H. 86407), 1921.07 (TNS 705017); N. Sakhalin, Nyiwo <23-lower l.>, Kudo, Y. & Tatewaki, M. 6510, 1922.08.13 (SAPS).

MIDDLE. E coast of Telpenia Bay, Mirkunai <40-lower r.>, Sudo, I., 1909.08.02 (SAPS); Mt. Mimizuku-yama <42-lower r.>, Tobita, H., 1935.07.26 (KYO); Mt. Horoto-yama <42-lower r. ?>, Nagamatsu, 1930.07.26 (KYO); Mt. Asase-yama <44-upper r.>, Sugawara, S. 17083, 1935.08.07 (SAPT); Shikka Distr., the upper Naruko <45-upper l. ?>, Yoshimura, B., 1936.08.14 (SAPS); Shikka, Mt. Kawashima <45-upper r.>, Sugawara, S., 1935.08.03 (SAPS); Mt. Kawashima-yama <45-upper r.>, Sugawara, S. 17085, 17086, 1935.08.03 (SAPT); Shikka Distr., Mt. Kawashima <45-upper r.>, Yoshimura, B., 1936.08.09 (SAPS); S. Sakhalin, Shikka-shicho, Shibunkoro <45-lower r.>, Hoshino, Y. & Sugiyama, S., 1933.08.06 (SAPS); S. Sakhalin, Shikka-shicho, Motomari <51-upper l.>, Hoshino, Y. & Sugiyama, S., 1933.08.03 (SAPS); Ooutori <54-upper r.>, Sugawara, S. 17079, 1935.08.19 (SAPT).

SOUTH. E. Coast, Mt. Nupuripo <57-lower l.>, Miyake, T., 1907.08.13 (SAPS); Mt. Tosso-zan <57-lower l.>, Yamada, G., 1926.08.04 (KYO); Mt. Tosso <57-lower l.>, Hiratsuka, N., 1927.07.20 (TI); E. Coast, Mt. Tosso <57-lower l.>, Hiratsuka, N., Iwadare, S. & Nagai, M., 1927.07.23 (SAPS); Mt. Tosso-zan <57-lower l.>, Sugawara, S. 17078, 1927.08.01 (SAPT); Mt. Tosso <57-lower l.>, Koidzumi, H. 20942, 1929.07.29 (TNS 900357); Mt. Tosso, 9-gome <57-lower l.>, Koidzumi, H. 20941, 1929.07.29 (TNS 900611); Mt. Nupuripo <57-lower l.>, Saito, S. 247, 1929.08.03 (TI- 2 sheets, TNS 687787); Mt. Tosso-zan <57-lower l.>, Hara, H. (C860), 1931.08.05 (TI- 2 sheets); Mt. Tosso-zan <57-lower l.>, Sato, M., 1932.07.24 (TI); Motodomari-shicho, Mt. Tosso-zan <57-lower l.>, Honda, M. & Kimura, Y., 1940.08.12 (TI- 4 sheets); Approx. 80km N of Dolinsk, Tsapko -N peak of Mt. Vladimirovka <57-lower l.>, Takahashi, H. 29552, 2001.08.02 (SAPS); Mt. Kashipo <57-upper r.>, Hiratsuka, N., 1928.08.07 (SAPS); Mt. Kashipo, peak <57-upper r.>, Koidzumi, H. 21390, 1929.08.01 (TNS 900536; the same sheet with

Peucedanum); S. Sakhalin, Mt. Kashipo <57-upper r.>, Takee, G. & Abumiya, H., 1932.08.05 (SAPS); Mt. Kashipo-yama <57-upper r.>, Sugawara, S. 17081, 1934.08 (SAPT); E. Coast, Chikaporonai <59-upper l.>, Miyake, T., 1907.08.08 (SAPS- 2 sheets); E. Coast, Mt. Chikaporonai <59-upper l.>, Miyake, T., 1907.08.12 (SAPS- 2 sheets); E. Coast, village Tikhaya <59-upper l.>, Fukuda, T. 2475, 2001.08.28 (SAPS); Mt. Susuya <65-upper r.>, Miyake, T., 1907.07.31 (SAPS- 2 sheets); Mt. Susuya <65-upper r.>, Sugawara, S., 1927.07.23 (TI); Mt. Susuya-dake <65-upper r.>, Sugawara, S. 17061, 1928.07.20 (SAPT); Mt. Susuya-yama <65-upper r.>, Sugawara, S. 17082, 1928.08.10 (SAPT); Mt. Susuya <65-upper r.>, Hara, H. (325a, b); 1928.08.13 (TI- 2 sheets); Mt. Ochiho-yama <65-upper r.>, Sugawara, S. 17084, 1934.08.02 (SAPT); Mt. Horoto-yama <65-upper r.>, Tashiro, Z., 1939.09.03 (KYO- 2 sheets); Approx. 8km E of Yuzhno-Sakhalinsk <65-upper r.>, Takahashi, H. 29282, 2001.07.22 (SAPS); Approx. 8km E of Yuzhno-Sakhalinsk <65-upper r.>, Takahashi, H. 29276, 2001.07.22 (SAPS); Peak Chekhov <65-upper r.>, Fukuda, T. 1185, 2001.07.22 (SAPS); Peak Chekhov <65-upper r.>, Fukuda, T. 1177, 2001.07.22 (SAPS); Todomoshiri, Dainanwan <73-lower l.>, Miyake, T., 1906.07.23 (SAPS- 2 sheets); Isl. Kaibato <73-lower l.>, Komat, S., 1915.08.12 (TI); Isl. Kaibato, Osaki <73-lower l.>, Kimoto, Murayama & Takee, 1931.08.01 (SAPS).

#### <THE KURILS>

NORTH. ATLASOVA <01>. Uomizaki, Ito, S. & Komori, G., 1926.08.15 (SAPS). SHUMSHU <02>. Kataoka-Bettobi, Endo, K., 1903.08.24 (SAPS); No locality, Yendo, K., 1903.08.24 (TI); No locality, Koidzumi, H. 41772, 1932.08.27 (TNS 900585); Shiroya, Ohashi, T., 1932.08.28 (KYO); Shiomi River, Ohwi, J. & Yoshii, R. 5722, 1934.07.29 (KYO). PARAMUSHIR <03>. Nagaiwasaki, Kudo, Y. 5130, 1920.07.11 (SAPS); Yotsuiwahama, Kudo, Y. 5176, 1920.07.12 (SAPS); Yotsuiwahana, Kudo, Y. 5303, 1920.07.14 (SAPS); Shirakawa, Kudo, Y. 5601, 1920.07.30 (SAPS); Ruesan, Kudo, Y. 5671, 1920.08.05 (SAPS); Tomarizaki, Kudo, Y. 5772, 1920.08.06 (SAPS); Tomarizaki, Kudo, Y. 5779, 1920.08.08 (SAPS); No locality, Koidzumi, H. 87800, 1924.08 (TNS 902760); No locality, Numajiri, K., 1927.08 (KYO); Kujira-wan, Koidzumi, H. 36936, 1932.07.21 (TNS 900356); Kujira-wan, near Mt. Kyozuka, Ohashi, T., 1932.07.27-29 (KYO- 2 sheets); Mt. Murakami-dake, 5-gome, Koidzumi, H. 38704, 1932.07.29 (TNS 900566); No locality, Ohashi, T., 1932.08 (KYO- 2 sheets); Eastern coast, Ohashi, T., 1932.08.05 (KYO); Suribachi-wan, Ohashi, T., 1932.08.30 (KYO); Kujirahama, Kojima, K. 1338, 1932 (TNS 182841); Kashiwabara-wan, Ohwi, J. (& Yoshii, R.) 5964, 1934.08.02 (KYO, SAPS); Raisha, Ohwi, J. & Yoshii, R. 6013, 1934.08.06 (KYO); E side of Vasil'yeva Bay, Takahashi, H. 21021, 1996.08.03 (SAPS); NW of Severo-Kurilsk, NE side of Mt. Ebeko, Kuwahara, Y. 121, 1997.08.05 (SAPS); NW of Severo-Kurilsk, NE

side of Mt. Ebeko, Takahashi, H. 23158, 1997.08.05 (SAPS- 2 sheets); Utesnaya Bay, Takahashi, H. 23621, 1997.08.11 (SAPS- 2 sheets); Krashennikova Bay, Takahashi, H. 23746, 1997.08.14 (SAPS).

MIDDLE. MAKANRUSHI <05>. Inland of Zakat Bay, Takahashi, H. 24001, 1997.08.18 (SAPS). ONEKOTAN <06>. Nemo, Tatewaki, M. 11018, 1928.08.08 (SAPS); Nemo Bay, Takahashi, H. 21209, 1996.08.04 (SAPS); Nemo Bay, Kuwahara, Y., 1996.08.04 (SAPS); Mussel Bay-Kol'tsevoye Lake, Takahashi, H. 21400, 1996.08.07 (SAPS). KAHKIMKOTAN <07>. Inland from Severgina Bay, Takahashi, H. 21541, 1996.08.08 (SAPS); NW side of the island, Takahashi, H. 28148, 2000.07.28 (SAPS). EKARMA <09>. No locality, Tatewaki, M. 11357, 1928.08.11 (SAPS); E of Cape Shpilevoy, Takahashi, H. 21660, 1996.08.10 (SAPS). SHIASHKOTAN <10>. Inland from Zakatnaya Bay, Takahashi, H. 21826, 1996.08.12 (SAPS); Zakatnaya Bay, Takahashi, H. 28232, 2000.07.29 (SAPS- 2 sheets). MATUA <12>. Inland from Dvoynaya Bay, Takahashi, H. 22006, 1996.08.14 (SAPS). RASSHUA <13>. Nakadomari, Tatewaki, M. & Takahashi 14956, 1929.08.03 (SAPS); Onuma, Tatewaki, M. & Takahashi 15164, 1929.08.05 (SAPS); Chotozan, Tatewaki, M. & Takahashi 15338, 1929.08.10 (SAPS); S of Yoriki-hama, Takahashi, H. 19147, 1995.08.12 (SAPS). KETOI <15>. No locality, Tatewaki, M. & Tokunaga, Y. 11521, 1928.09.01 (SAPS); Near Ashizaki, Tatewaki, M. & Takahashi, K. 15435, 1929.08.18 (SAPS); Near Ashizaki, Tatewaki, M. & Takahashi, K. 15452, 1929.08.18 (SAPS); Isozaki, Tatewaki, M. & Takahashi, K. 15581, 1929.08.24 (SAPS); Near Shimizugawa, Tatewaki, M. & Takahashi, K. 15660, 1929.08.30 (SAPS); Nishiura, Tatewaki, M. & Takahashi, K. 15677, 1929.09.04 (SAPS); Mouth of Stochnyy River, Takahashi, H. 19599, 1995.08.19 (SAPS). SIMUSHIR <16>. Broton Bay, Kodama, 1893.06 (SAPS); Malaya inlet, Takahashi, H. 19479, 1995.08.18 (SAPS); Nakatomari Bay, Takahashi, H. 19777, 1995.08.22 (SAPS). CHIRPOI <18a>. Peschanaya Bay, Takahashi, H. 19807, 1995.08.23 (SAPS). BRAT CHIRPOEV <18b>. Uglovaya Bay, Takahashi, H. 28460, 2000.08.04 (SAPS). URUP <19>. Anama, Jimbo, K., 1891.06.18 (SAPS); Megane, Kitahara, T., 1895.08.1-9 (SAPS); Kobune, Tatewaki, M. 9806, 1927.08.26 (SAPS); Near Tokotan, Tatewaki, M. 9609, 1927.08.29 (SAPS); Otkrytyy Bay, Takahashi, H. 18454, 1995.08.04 (SAPS- 2 sheets); Otkrytyy Bay, Takahashi, H. 18589, 1995.08.05 (SAPS); Natalii Bay, Takahashi, H. 18757, 1995.08.07 (SAPS); Novokuril'skaya inlet, Takahashi, H. 18833, 1995.08.08 (SAPS); About 15km NE of Van-Der-Lind Cape, Ohara, M., 1995.08.26 (SAPS); Barhatnyy Bay, Takahashi, H. 20135, 1995.08.28 (SAPS- 2 sheets); Barhatnyy Bay, Takahashi, H. 20118, 1995.08.28 (SAPS); Negodnaya Bay, Takahashi, H. 20145, 1995.08.29 (SAPS); Inland from Ukromnaya Bay, Takahashi, H. 22180, 1996.08.20 (SAPS); Tetyayeva Bay, Takahashi, H. 28622, 2000.08.08 (SAPS).

SOUTH. ITURUP <20>. Onnebetsu, Ishikawa,

T., 1890.08.07 (SAPS); Rubetsu-mura, Yokoyama, S., 1893.07 (SAPS); Moyoroyama, Yokoyama, S., 1893.07.27 (SAPS); Mt. Atoiya, Kawakami, T., 1898.08.11 (TI); Toshiruri, Kawakami 393, 1898.09 (SAPS); Shibetoru (Shibetoro), Miura, K., 1906.07.21 (SAPS- 2 sheets); Shibetoro–Moyoro, Tanaka, G. & Miyabe, Ken., 1910.07.18 (SAPS); Shana, Kondo, K., 1927.07.09 (TI); Shana, Kondo, K., 1927.07.11 (TI); Shamanbe, Kondo, K. (1898), 1927.07.14-15 (TI- 2 sheets, TNS 688061); Porosu–Sokiya, Kondo, K., 1927.07.18 (TI); Mt. Atoiya, Kondo, K., 1927.07.21 (TI- 2 sheets); Porosu–Sokiya, Saito, S. 3986, 1928.08.07 (TI- 2 sheets); Mt. Sashiusu, Saito, S., 1928.08.22 (TI); Toshimoe–Guya, Saito, S., 1928.08.27 (TI); Rubetsu, Saito, S. (6247), 1928.09.04 (TI- 2 sheets, TNS 645285); Rakko-iwa, Koidzumi, H. 24561, 1930.08.04 (TNS 900355); Porosu, Koidzumi, H. 25240, 1930.08.12 (TNS 902756); Moyoro-sando, Koidzumi, H. 25642, 1930.08.18 (TNS 902820); Mt. Hitokappu, Koriba, M. & Yoshii, R., 1933.08.14 (KYO); Shana, Yoshimura, B., 1937.08.07 (SAPS); Shana village, nera wetland of Yanketou, Azuma, T. & al. 3314, 2002.06.24 (SAPT). KUNASHIR <21>. Mt. Chacha-nupuri, Okada, Y., 1929.08.01 (TNS 386345, 386343); Atoiya, Nagai, M. & Shimamura, M., 1929.08.03 (SAPS); Atoiya, Nagai, M. & Shimamura, M., 1929.08.03 (SAPS- 2 sheets); Mt. Chacha-nupuri, Okada, Y., 1929.08.03 (TNS 386344); Chachanupuri, Koriba, M. & Yoshii, R., 1933.07.23 (KYO); Mt.

Tomari, Tatewaki, M. 25507, 1936.08.20 (SAPS); Mt. Chacha, Ito, K., 1939.08 (SAPS). SHIKOTAN <22>. No locality, Miyabe, K., 1884.07.27 (SAPS); Anama, Takeda, H., 1909.07.20 (TNS 29733); Masuba, Miyabe, Ken. & Tanaka, G., 1910.08.14 (SAPS); Mt. Shakotan, Saito, S., 1925.08.30 (TI- 2 sheets); Shakotan, Saito, S., 1925.09.02 (TI); Shakotan–Horobetsu, Saito, S., 1925.09.05 (TI); Mt. Okkaibetsu, Saito, S., 1925.09.05 (TI- 2 sheets); No locality, Kondo, K. 7898, 1927.08.11 (TI- 2 sheets); No locality, Kondo, K. 7909, 1927.08.11 (TI- 2 sheets); Near Shakotan, Tatewaki, M. 9522, 1927.08.23 (SAPS); Shakotan, Kondo, K. 300, 1929.08.04 (TI- 3 sheets); Chiboi, Kondo, K., 1929.08.10 (TI); Anama, Kondo, K. 335, 1929.08.28 (TI- 2 sheets, TNS 688153); Horobetsu–Okkaibetsu, Kondo, K., 1929.08.31 (TI); Masuba–Notoro, Kondo, K., 1929.09.03 (TI); Notoro–Kiridoshi, Kondo, K. 298, 1929.09.03 (TI- 2 sheets); Mt. Tomari, Kondo, K. 5952, 1929.09.05 (TI, TNS 643133); Chiboi–Umanose, Kondo, K. 5949, 1929.09.07 (TI- 2 sheets); Umanose, Ohwi, J., 1931.08.30 (KYO); Shakotan–Kagenoma, Ohwi, J., 1931.08.31 (KYO); Shakotan, Ono, S.T., 1933.08.07 (TI); Notoro–Inemoshiri, Saito, S., no year.09.06 (TI).

**30. *Torilis japonica* (Houtt.) DC. [Yabu-jirami]**  
[No specimens in Japanese herbaria]