

## The Distribution of Rubus in Japan : 2. Some notes on the distribution

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## The Distribution of *Rubus* in Japan

### — 2. Some Notes on the Distribution —

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鳴橋直弘・里見信生：日本産キイチゴ属植物の分布 2. 分布考察

The distribution maps which contain all the Japanese species of *Rubus* were already reported by same authors in before volume of this report. Here the distribution patterns were considered, and some informations about individual species were added.

#### 1. Distribution density

The distribution density of Japanese *Rubus* is shown in Fig. 1 concerning the unit of district. Kyushu District is one of the most crowded two. It may be reason that several species which occur in the subtropical region have the northern limit in this area. The more northern is, the more decrease of the density, with the exception of Chubu and Kanto District. The both district, Chubu and Kanto, show more crowded condition, and the reason for this is following two points. The Pacific sea side of the area is warmer under the influence of warm current and then some subtropical species can keep alive. The high mountains of inland area allow the subarctic species to live in.

#### 2. Distribution pattern

In point of the distribution on only plane map, the distribution patterns of Japanese *Rubus* may be able to classify into five types.

##### a. Ryukyu Isls type

The species distributed in the Ryukyu Isls. including the southern part of Kyushu, as *R. amamianus*, *R. grayanus*, *R. nesiotetes*, and *R. okinawensis*. This area is the sub-tropical zone in climate.

##### b. Southern type

The species distributed south than Niigata and Ibaraki prefectures except for the inland region of Chubu District. *R. buergeri*, *R. croceacanthus*, *R. hakonensis*, *R. minusculus*, *R. ribisoideus*, *R. sieboldii*, *R. sumatranus*, and *R. trifidus*. Species of this type are evergreen or with biennial shoots without any complete winter buds. The absence in inland of Chubu District may closely connect with the cold and dryness in the

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winter.

c. Northern type

The species distributed in Hokkaido and high mountains of Honshu, such as *R. chamaemorus*, *R. idaeus*, *R. pedatus*, *R. pseudojaponicus*, and *R. vernus*. We know that these or closely allied species occur in subarctic regions and high mountains of Europe, Asia, and N. America.

d. Pan-Japan type

The species distributed in Kyushu, Shikoku, Honshu, and Hokkaido. The species (if it is not relict) distributed in only Honshu is contained in this type. *R. ikenoensis*, *R. koeneanus*, *R. oldhamii*, *R. pectinellus*, *R. peltatus*, and *R. pseudoacer*.

e. Local or relict type

The species distributed discontinuously or in limited area, as *R. chingii*, *R. kisoensis*, *R. lambertianus*, and *R. yoshinoi*.

### 3. Relation between distribution patterns and taxa

Japanese *Rubus* are divided into 5 subgenera: *Chamaemorus*, *Cylactis*, *Chamaebatus*, *Malachobatus*, and *Idaeobatus*. Both *Chamaemorus* (1 sp.) and *Cylactis* (2 spp.) show Northern type distribution. *Chamaebatus* consisted of one species is Pan-Japan type. *Malachobatus* is Ryukyu type or Southern type. *Idaeobatus* consists of all types, but some Sections in this subgenus show the particular type.

### 4. Relation between distribution patterns and floristic regions

As to the floral region, Japan belongs to the Sino-Japanese Region. Further it is divided some small floristic regions. Japanese *Rubi*, however, are not closely connected with these regions except a few species.

Japan-sea side region is a characteristic with heavy snow in winter. And therefore several vicarious species and varieties in contrast with the Pacific-sea side region are found. Japanese *Rubus* presents no examples in that case.

### 5. Habitat and distribution

As for the vertical distribution, *Rubus* occurs in various elevations in Japan. According to various vegetational types, the species of *Rubus* are different as follows.

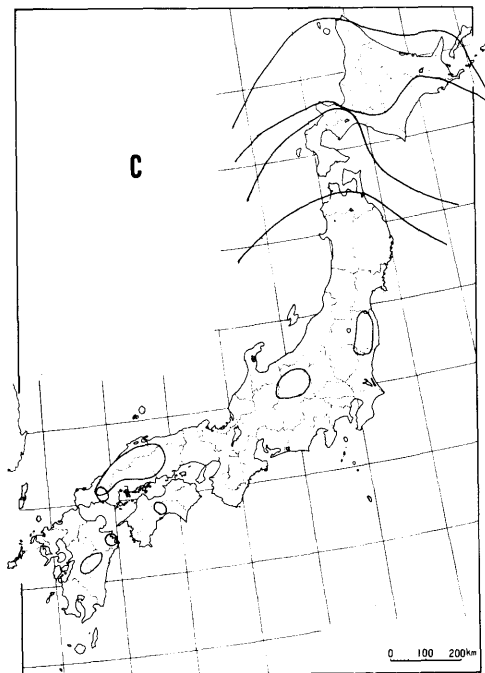
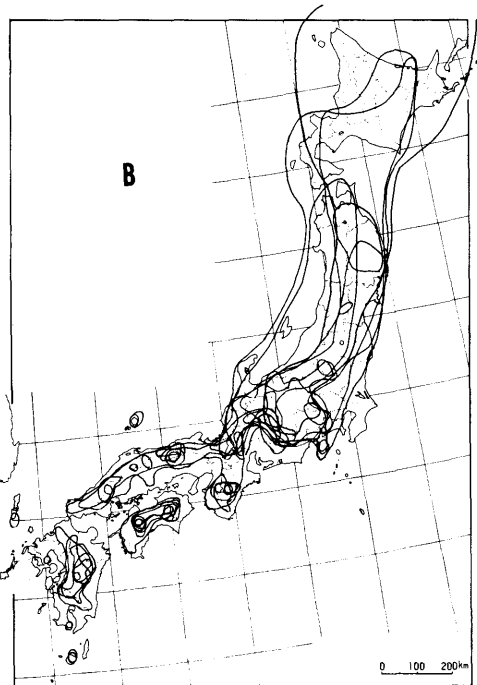
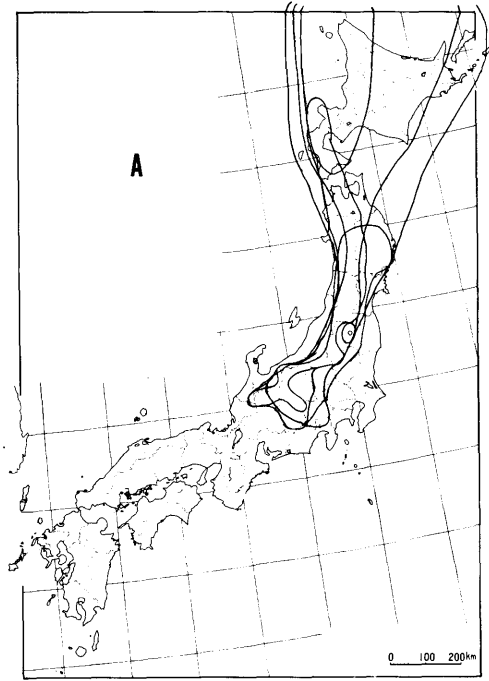
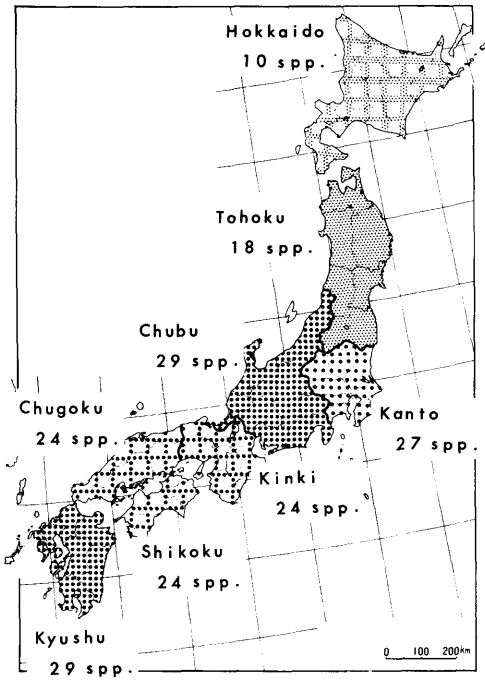
A. Upper than coniferous forest (more than 1500 m alt.): *R. pedatus*, *R. vernus*, *R. pseudojaponicus*, *R. ikenoensis*, and *R. chamaemorus*. Fig. A.

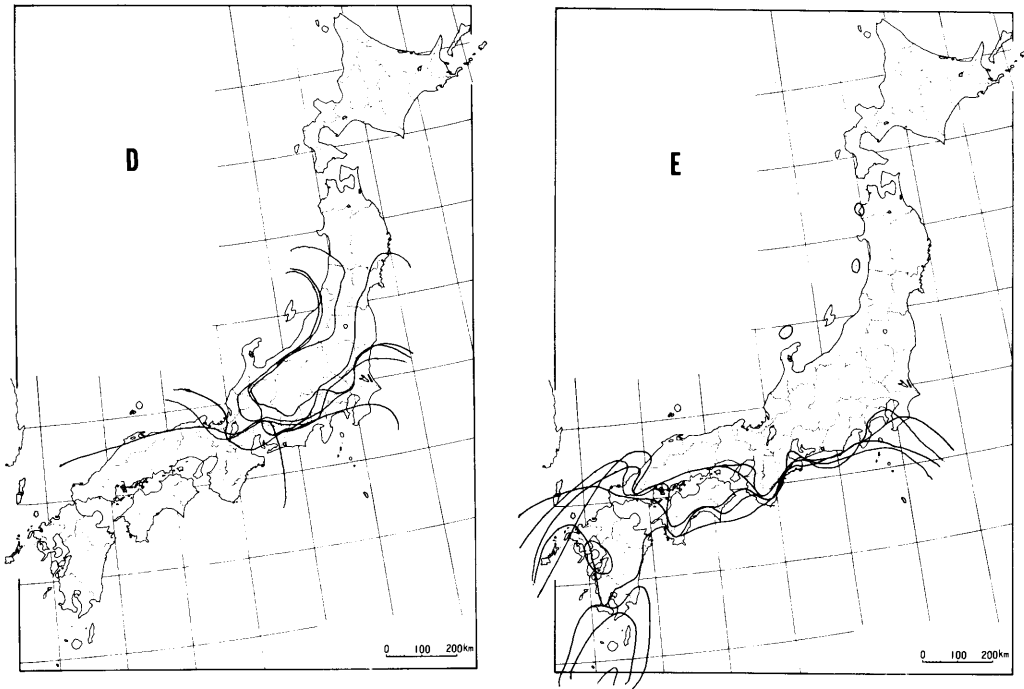
B. Deciduous forest (1000 m to 1500 m alt.): *R. idaeus*, *R. koehneanus*, *R. pseudoacer*, *R. phoenicolasius*, *R. peltatus*, *R. mesogaeus*, *R. oldhamii*, *R. illecebrosus*, *R. pectinellus*, and *R. kisoensis*. Fig. B.

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\* based on central Honshu

Fig. 1. Distribution density of Japanese *Rubus*.





C. Mixed forest (300 m to 1000 m alt.): *R. crataegifolius*, *R. palmatus*, *R. microphyllus*, *R. yoshinoi*, *R. chingii*, and *R. parvifolius*. Fig. C.

D. Evergreen forest (0 m to 300 m alt.): *R. buergeri*, *R. hakonensis*, *R. hirsutus*, *R. minusculus*, *R. sumatranus*, *R. corchorifolius*. Fig. D.

E. Subtropical forest: *R. trifidus*, *R. pseudosieboldii*, *R. ribifolius*, *R. croceacanthus*, *R. ribisoideus*, *R. lambertianus*, *R. okinawensis*, *R. sieboldii*, *R. amamianus*, and *R. nesiotus*. Fig. E.

The vertical distribution is closely related with the horizontal distribution in this materials as well as many other species.

#### 6. The factor in the distribution

It is considered that the plant distribution is primarily controlled by the distribution of climatic condition. In the case of *Rubus* it may be true without doubt. Furthermore edaphic control is almost unimportant on *Rubus*, because some Rubi in Japan occur in the special place such as limestone and serpentine area, but they are observed in another places and cultivated in some edaphic conditions. Biotic factors are also of importance in the following points. Animals especially birds for extending the distribution are present. Plants which defeat the life of *Rubus* are absent.

The process in the spread of distribution on *Rubus* may be supposed in the three stages. First, it is the dissemination of seeds by numerous birds and some mammals. The advantage that the agent of dissemination of *Rubus* is mainly birds, is not only the long distance transportation but to give a higher percentage of germinating seeds and to accelerate to germinate sooner. Second, it is germination of seeds. Third, it is the maintenance of individual. Almost all the plant species seem to establish in the place by means of propagating another individuals after flowering and fruiting. *Rubus*, however, seem to establish in the place if the maintenance of individual can keep, because *Rubus* has vegetative reproduction system. Throughout the three stages, the last will be more important. The chief factor to determine it may be light and temperature concerning the climate of the environment and tolerance of plants with the genetic basis concerning a plant itself.

#### 7. Informations about individual species

1. *R. amamianus* HATUSIMA et OHWI アマミフユイチゴ Map 1.

In thickets; Ryukyu (Mt. Yuwan-dake in Isl. Amami-oo-shima, and Mt. Inokawa-dake in Isl. Tokuno-shima); extremely rare.

Endemic.

HATUSIMA, S. (1971) Fl. Ryukyu p. 309.\*

2. *R. buergeri* MIQ. フユイチゴ Map 2.

In or borders of woods near seashores to low mountain regions; n. Ryukyu, Kyushu, Shikoku, and w. & m. Honshu (Hokuriku & Kanto Distr.); common. Northern limit: Ishikawa Pref. Suzu-shi, Zyoyama; Niigata Pref. Tochio-shi, Higashitani; Ibaraki Pref. Kitaibaraki-shi. Southern limit: Kagoshima Pref. Ooshima-gun, Isl. Akuseki-jima in Isls. Tokara.

Distr. China, s. Korea, and Formosa.

NODA, M. (1969) Fl. Echigo Prov. Mid. Jap. Fac. Japan II, p. 149. Okayama-ken (1930) Seibutsu-mokuroku p. 37. UEMATSU, H. (1967) Vasc. Fl. South. Jap. Alps p. 421.

3. *R. chamaemorus* LINN. ヤチイチゴ Map 3.

In peat bogs or in Sphagnum bogs; Honshu (Fukushima Pref.) and Hokkaido (w. part); rare but sometimes locally abundant. S. limit: Fukushima Pref. Aizuwa-kamatsu-shi, Akai-yachi.

Distr. n. e. China, n. Korea, Primorskaya, Amur, n. Aleutian, n. N. America, and Europe.

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\* Reference added to the end of description of each species is useful to know the distribution of the species.

4. *R. chingii* HU ゴシヨイチゴ Map 4.

In thickets or on open places in woods in the lowlands, rarely in serpentine areas; Kyushu (Minami-amabe-gun in Ooita Pref.), Shikoku (Tosa-gun in Kochi Pref.) and Honshu (Saba-gun in Yamaguchi Pref.); extremely rare.

Distr. China.

YAMANAKA, T. (1966) Journ. Jap. Bot. 41 : 276.

5. *R. corchorifolius* LINN. fil. ピロードイチゴ Map 5.

In evergreen broadleaved forest near seashores to the mountain regions; Kyushu (w. part) and Honshu (Chugoku & Kinki Distr., and Tajimi-shi in Gifu Pref.); rather rare. E. limit : Gifu Pref Tajimi-shi. S. limit : Kagoshima Pref. Mt. Kanmuri-dake.

Distr. China, Formosa, and Korea.

This species reported by MASAMUNE (in Sci. Rep. Kanazawa Univ. 3 : 112, 1955) from Okinawa, but the authors have seen no specimen from Okinawa.

6. *R. crataegifolius* BUNGE クマイチゴ Map 6.

On open places, in thickets, or borders of woods, rarely river beds from the low altitude up to the nearly alpine zone; Kyushu, Shikoku, Honshu, and Hokkaido (s. part); common. E. limit : Hokkaido Pref. Akkeshi-gun, Akkeshi-cho. N. limit : Hokkaido Pref. Kushiro-gun, Mt. Meakan-dake. S. limit : Kagoshima Pref. Kumage-gun, Isl. Tanegashima.

Distr. China, Manshuria, Korea, Primorskaya, Amur, and e. Siberia.

HAMAYA, T. (1971) in Fumoto Kaiki 50-nen shi, Fumotogo-no-50-nen p. 34.

TATEWAKI, M. (1927) Veget. Oistr. Akan p. 72.

7. *R. croceacanthus* LÉVL. オオバライチゴ Map 7.

On open places or in thickets, near seashores rarely mountain regions; Kyushu, Shikoku (s. part) and Honshu (s. part of Kinki Distr.); rare. N. & E. limit : Chiba Pref. Mt. Kiyosumi-yama. S. limit : Kagoshima Pref. Isl. Tokunoshima.

Distr. Korea and Formosa?

KURATA, S. (1951) Journ. Jap. Bot. 26 : 217.

8. *R. grayanus* MAXIM. リュウキュウイチゴ Map 8.

On open places or in thickets near seashores; Ryukyu and Kyushu (s. part of Kagoshima Pref.); rare but locally abundant. N. limit : Kagoshima Pref. Ooneshime-cho. S. limit : Okinawa Pref. Isl. Kerama-jima.

Endemic.

9. *R. hakonensis* FR. et SAV. ミヤマフユイチゴ Map 9.

In or borders of woods in mountain foothills; Kyushu, Shikoku and w. & m. Honshu

(Hokuriku & Kanto Distr.); rather common. N. limit : Niigata Pref. Gosen-shi, Ookura. S. limit : Kagoshima Pref. Aira-gun, Mt. Nagao-yama.

Distr. China.

NODA, M. (1969) Fl. Echigo Prov. Mid. Jap. Fac. Japan Sea II, p. 151. OKUHARA, H. (1971) Kisodani-no-shokubutsu p. 101. Tokushima-ken (1971) Tsurugi-san kenmin-no-mori p. 76.

10. *R. hirsutus* THUNB. クサイチゴ Map 10.

On open places rarely under forest, in the lowlands or mountain foothills; Kyushu, Shikoku and Honshu (extinct n. part of Tohoku Distr.); common. N. limit : Yamagata Pref. Akumi-gun, Yusa-cho Fukura; Iwate Pref. Higashi-iwai-gun, Monzaki-mura. S. limit : Kagoshima Pref. Ibusuki-gun, Yamakawa-cho.

Distr. China and Korea.

Iwate-shokubutsu-no-kai (1970) Fl. Iwate p. 416. NODA, M. (1969) Fl. Echigo Prov. Mid. Jap. Fac. Japan Sea II, p. 150.

11. *R. idaeus* LINN. エゾキイチゴ Map 11.

On open places, in thickets, borders of woods, from the lowlands to fairly high elevations in the mountains especially in c. Honshu and Shikoku up to the subalpine zone; Shikoku (Mts. Ishizuchi), c. & n. Honshu and Hokkaido; rather rare but in Hokkaido rather common. S. limit : (var. *yabei*) Nagano Pref. Mt. Kiso—Mt. Surikogi—Mts. Minami-alps; (var. *shikokianus*) Ehime Pref. Mts. Ishizuchi.

Distr. China, Korea, Siberia, Primorskaya, Amur, Okhotsk, Kamchatka, Sakhalin, Kuriles, N. America, Caucasus, and Europe.

Ehime-shinbunsha (1960) Sci. Res. Ishizuchi-Range, p. 200.

12. *R. ikenoensis* LÉVL. et VNT. ゴヨウイチゴ Map 12.

In or borders of woods, at rather high elevations in the mountains; c. & n. Honshu; rather rare. N. limit : Akita Pref. Hanawa, Kumanosawa. S. limit : Mt. Tekari in Minami Alps. W. limit : Gifu Pref. Mt. Dainichi-dake.

Endemic.

HARA, H. & KANAI, H. (1959) Distr. Maps Fl. Pl. Jap. 2 : Map 161. MURAI, S. (1935) Prel. rep. Fl. indig. Distr. Lake-Towada & Mt. Hakkoda prov. Mutsu p. 63. OKUHARA, H. (1971) Kisodani-no-shokubutsu p. 101.

13. *R. illecebrosus* FOCKE バライチゴ Map 13.

At borders or in deciduous forest, at moderate elevations in the mountains; Kyushu, Shikoku, and w. & c. Honshu; rather rare. E. limit : Kanagawa Pref. Mt. Tanzawa-yama. N. limit : Toyama Pref. Naka-shinkawa-gun, Kamiichi-cho, Mt.



Takamine-yama. S. limit : Kagoshima Pref. Isl. Yakushima.

Endemic.

14. *R. kisoensis* NAKAI キソキイチゴ Map 14.

In fairly deep, usually moist woods at moderate elevation in the mountains ; Honshu (Chubu Distr.): extremely rare but s. w. part of Kiso-gun in Nagano Pref. very abundant. The two habitats in Mt. Shirouma (Nagano Pref. Kita-azumi-gun, M. FURUSE, June 23, 1958, Herb. Kanazawa Univ.) and Kami-anauma (Fukui Pref. Oono-gun, Shimohanbara-shogakko, June 20, 1933, Herb. Kyoto Univ.) need further confirmation.

Endemic.

Gifuken-no-shokubutsu-kankokai (1966) Gifuken-no-shokubutsu p. 45. OKUHARA, H. (1971) Kisodani-no-shokubutsu p. 179.

15. *R. koehneanus* FOCKE ミヤマニガイチゴ Map 15 (right figure of page 9).

In thichets or at borders of woods from the lowlands to fairly high elevations in the mountains ; Honshu ; rare but rather common in the mountains of c. Honshu. N. limit : Iwate Pref. Morioka-shi, Asagishi. W. limit : Hiroshima Pref. Hiba-gun, Saiho-cho, Miino.

Distr. China and Korea, var. *formosanus* CARD. in Formosa.

Iwate-shokubutsu-no-kai (1970) Fl. Iwate p. 417.

16. *R. lambertianus* SER. シマバライチゴ Map 16 (left figure of page 9).

In evergreen broadleaved woods in the low altitude ; Kyushu (Nagasaki Pref. and Kumamoto Pref.); very rare. N. limit : Nagasaki Pref. Oomura-shi, (Kyu-) Kayaze-mura.

Distr. China and Formosa.

Nagasaki-ken-hakubutsu-kenkyu-kai (1940) Fl. Nagasaki p. 50.

17. *R. mesogaeus* FOCKE クロイチゴ Map 17.

In or borders of woods from the lowlands to fairly high elevation in the mountains ; Kyushu, Shikoku, Honshu, and Hokkaido ; rather rare. N. limit : Hokkaido Pref. Abashiri-gun, Monbetsu-shi. S. limit : Kumamoto Pref. Yatsushiro-gun, Gokanoshō, Momiki.

Distr. w. & c. China, Formosa, Himalaya (Nepal to Bhutan) and Kuril (Isl. Kunashiri).

18. *R. microphyllus* LINN. fil. ニガイチゴ Map 18.

On open places or in thickets, usually in the low mountains ; Kyushu, Shikoku and Honshu ; common. N. limit : Aomori Pref. Aomori-shi.

Distr. China.

Iwate-shokubutsu-no-kai (1970) Fl. Iwate p. 417. Nagasaki-ken-hakubutsu-kenkyu-kai (1940) Fl. Nagasaki p. 50.

19. *R. minusculus* LEVL. et VNT. ヒメバライチゴ Map 19.

In or borders of woods, usually mountain foothills; Kyushu, Shikoku, and w. & s. Honshu; rather rare. E. limit: Chiba Pref. Mt. Kiyosumi-yama. S. limit: Kagoshima Pref. Kimotsuki-gun, Sada-cho, Isl. Biro-jima.

Endemic.

20. *R. nesiotis* FOCKE クワノハイチゴ Map 20.

Ryukyu; extremely rare.

Endemic. Two closely allied species, *R. swinhoei* HANCE in China and Formosa, and *R. kawakamii* HAYATA in Formosa. This species was reported from Isl. Yakusima by MASAMUNE (MASAMUNE, Fl. & Geobot. Stud. Isl. Yakusima p. 231, 1934), but the authors observed no specimen from Isl. Yakusima.

HATUSIMA, S. (1971) Fl. Ryukyus p. 309.

21. *R. okinawensis* KOIDZ. リュウキュウバライチゴ Map 21.

In thickets, usually near seashores; Ryukyu and s. Kyushu; rare but locally abundant. N. limit: Miyazaki Pref. Udo-jingu.

Endemic. Some closely allied species in Formosa.

22. *R. oldhamii* MIQ. サナギイチゴ Map 22.

On open places, in or borders of woods from the lowlands to fairly high elevations in the mountains; Kyushu, Shikoku, and Honshu; rare. N. limit: Aomori Pref. Higa-shi-tsugaru-gun, Kominato. S. limit: Kumamoto Pref. Yatsushiro-gun, Izumi-mura, Matashi-dani.

Distr. China, Korea, and Formosa.

Iwate-shokubutsu-no-kai (1970) Fl. Iwate P. 418. Tokushima-ken (1971) Tsurugi-san Kenmin-no-mori p. 76.

23. *R. parvifolius* LINN. ナワシロイチゴ Map 23.

On open places in shores, banks of rivers, meadows, thickets, borders of woods, from the lowlands to midmontane; Kyushu, Shikoku, Honshu, and Hokkaido; very common. N. limit: Hokkaido Pref. Isl. Rishiri. E. limit: Hokkaido Pref. Nemuro-shi.

Distr. China, Korea, Formosa, and Kurile (Isl. Kunashiri).

Hokkaido-keishochi-kyokai (1934) Kitami-Rebunto Shokubutsu Gaisetsu p. 9. NODA, M. (1969) Fl. Echigo Prov. Mid. Fac. Japan Sea II, p. 150.

24. *R. palmatus* THUNB. モミジイチゴ Map 24.

In or borders of woods from the lowlands to fairly high elevation in the mountains;

Kyushu, Shikoku, Honshu, and Hokkaido; common. N. limit: Hokkaido Pref. Ishikari, Sapporo-shi, Maruyamanishi-machi. S. limit: Kagoshima Pref. Kumage-gun, Isl. Yakushima.

Distr. China and Korea.

25. *R. pectinellus* MAXIM. コバノフユイチゴ Map 25.

Generally in deciduous forest in temperate region; Kyushu, Shikoku, and Honshu; rather rare. N. limit: Aomori Pref. Oohata-cho, Ya-ken. S. limit: Kagoshima Pref. Isl. Yakushima.

Distr. Philippin (ex Focke, Species Ruborum, 1910); var. *trilobus* KOIDZ. in Formosa.

26. *R. pedatus* SMITH コガネイチゴ Map 26.

In moist woods in coniferous zone or under *Pinus pumila* thickets in the alpine zone; c. & n. Honshu and Hokkaido; very rare. W. limit: Ishikawa Pref. Mt. Hakusan. S. limit: Nagano Pref. Mt. Tekari-dake.

Distr. n. Sakhalin, s. Kuriles, and N. America.

Gifuken-no-shokubutsu-kankokai (1966) Gifu-ken-no-shokubutsu p. 395. SATOMI, N. & HASHIMOTO, M. (1970) Sci. Res. Group Hakusan Nat. Park, in Sci. St. Hakusan Nat. P. Jap. p. 217. TATEWAKI, M. (1927) Veget. Distr. Akan p. 72.

27. *R. peltatus* MAXIM. ハスノハイチゴ Map 27.

In deciduous woods of mountainous regions; c. Kyushu, Shikoku, and Honshu (Chugoku & Chubu Distr.); rather rare but locally abundant. N. limit: Gifu Pref. Shogawa-mura, Murai. S. limit: Kumamoto Pref. Mt. Ichifusa-yama.

Distr. China.

HARA, H. & KANAI, H. (1959) Distr. Maps Fl. Pl. Jap. 2: Map 162. OKUHARA, H. & NARUHASHI, N. (1969) Acta Phytotax. Geobot. 23: 189.

28. *R. phoenicolasius* MAXIM. エビガライチゴ Map 28.

In or borders of woods, usually in the mountains rarely near seashores; Kyushu, Shikoku, Honshu, and Hokkaido; rather rare. N. limit: Hokkaido Pref. Abashiri-gun, Saroma-mura, Chirai. S. limit: Miyazaki Pref. Kitamorokata-gun, Takasaki.

Distr. China and Korea.

Nagasaki-ken-hakubutsu-kenkyu-kai (1940) Fl. Nagasaki p. 51. NODA, M. (1969) Fl. Echigo Prov. Mid. Jap. Fac. Japan Sea II, p. 150. TATEWAKI, M. (1932) Hokkaido Imp. Univ. Fac. Agric. Enshurin Rep. 7: 118.

29. *R. pseudoacer* MAKINO ミヤマモミジイチゴ Map 29.

On open to rather shaded places in moist woods in high elevations in the mountains; Shikoku and Honshu (Kinki, Chubu & Kanto Distr.); very rare. N. limit:

Fukushima Pref. Mt. Hiuchi-dake. S. limit: Kochi Pref. Agawa-gun, Ikegawa-cho, Akaidani.

Endemic.

OKUHARA, H. (1971) *Kisodani-shokubutsu* p. 101.

30. *R. pseudojaponicus* KOIDZ. ヒメゴヨウイチゴ Map 30.

In woods from near sea level (at Hokkaido) up to subalpine (at c. Honshu); c. & n. Honshu and Hokkaido; rare. E. limit: Gifu Pref. Yoshiki-gun, Miyakawa-mura, Mannami. S. limit: Shizuoka Pref. Mt. Fuji-san.

Distr. Kuril (Isl. Kunashiri). A closely allied species, *R. americanus* (PERS.) BRITT. in n. N. America.

Gifuken-no-shokubutsu-kankokai (1966) *Gifuken-no-shokubutsu* p. 395. HARA, H. & KANAI, H. (1959) *Distr. Maps Fl. Pl. Jap. 2: Map 163*. OKUHARA, H. (1971) *Kisodani-no-shokubutsu* p. 102.

31. *R. pseudosieboldii* (MAKINO) MAKINO オオフユイチゴ Map 31.

In or borders of woods, usually near seashores; Kyushu, Shikoku, and w. & s. Honshu; rather rare but locally abundant. E. limit: Chiba Pref. Anbo-gun, Mt. Kiyosumi-yama. S. limit: Kagoshima Pref. Kimotsuki-gun, Sada-cho.

Endemic.

NAKANISHI, H. (1970) *Shokubutsu-saishu News* 50: 23.

32. *R. ribifolius* SIEB. et ZUCC. ハマキイチゴ Map 32.

On open places or in thickets, near seashores; Kyushu, Shikoku, and w. & s. Honshu; rather rare but locally abundant. E. limit: Chiba Pref. Kimitsu-gun. S. limit: Kagoshima Pref. Sadamisaki, Isl. Biro-jima.

Endemic.

33. *R. ribisoideus* MATSUM. ビロードカジイチゴ Map 33.

On open places or in thickets, near seashores; Kyushu, Shikoku, and w. & s. Honshu; rather rare. E. limit: Tokyo Pref. Isls. Izu-shoto. S. limit: Kagoshima Pref. Ooshima-gun, Isl. Akuseki-jima.

Distr. s. Korea.

NAKANISHI, H. (1970) *Shokubutsu-saishu News* 50: 23.

34. *R. sieboldii* BLUME ホウロクイチゴ Map 34.

In or borders of woods, near seashores; Ryukyu, Kyushu, Shikoku, and w. & s. Honshu; rare but locally occurs in large quantities. E. limit: Tokyo Pref. Isl. Nii-shima. N. limit: Yamaguchi Pref. Abu-gun, Ezaki-cho.

Endemic.

BENITANI, S. (1971) Hyogo-ken-shokubutsu-mokuroku p. 93. NAKANISHI, H. (1970) Shokubutsu-saishu News 50 : 23.

35. *R. sumatranus* MIQ. コジキイチゴ Map 35.

In thickets or on waste grounds at rather low elevation in the mountains; Kyushu, Shikoku, and w. Honshu; rather rare. N. limit: Ibaraki Pref. Onmaeyama. S. limit: Kagoshima Pref. Aira-gun, Mt. Yasura.

Distr. w. & c. China, Formosa, s. Korea, e. Himalaya, Thailand, Indo-China, Assam, and Sumatra.

BENITANI, S. (1971) Hyogo-ken-shokubutsu-mokuroku p. 93. Okayama-ken (1930) Seibutsu-mokuroku p. 37.

36. *R. trifidus* THUNB. カジイチゴ Map 36.

On open places near seashores; Kyushu, Shikoku, and Honshu; rather rare. N. limit: Aomori Pref. Iwasaki-mura.

Distr. Korea and China? (MIQ. in Ann. Mus. Bot. Lugd.-Bat. 3 : 36, 1867).

BENITANI, S. (1971) Hyogo-ken-shokubutsu-mokuroku p. 93. Iwate-shokubutsu-no-kai (1970) Fl. Iwate p. 419. Okayama-ken (1930) Seibutsu-mokuroku p. 37. Nagasaki-ken-hakubutsu-kenkyukai (1940) Fl. Nagasaki p. 51.

37. *R. vernus* FOCKE ベニバナイチゴ Map 37.

In thickets in the alpine zone; c. & n. Honshu (generally Japan-Sea side) and s. w. Hokkaido; rare. W. limit: Fukui Pref. Mt. Sannomine in Mts. Hakusan. S. limit: Nagano Pref. Mt. Senjo-dake.

Endemic. A closely allied species, *R. spectabilis* PURSH, in Aleutian, Canada, and U. S. A.

38. *R. yoshinoi* KOIDZ. キビナワシロイチゴ Map 38.

On open places or borders of woods from the lowlands to midmontane, often in limestone area; Kyushu (central mountain region) and Honshu (Chugoku Distr., Nagano Pref., and Fukushima Pref.); rare. N. limit: Fukushima Pref. Date-gun, Mt. Ryozan. S. limit: Kumamoto Pref. Kuma-gun, Itsuki.

Endemic.

OKUHARA, H. (1971) Kisodani-no-shokubutsu p. 102.

## 摘 要

筆者らはすでに日本産キイチゴ属全種の分布について報告した。今回はそれらの分布を色々な点から考察するとともに、分布についてのデータ（生育地の生態，分布の北限や南限，日本以外での分布，その種の分布を理解する上で参考になる文献）を全種について記載した。

分布密度が濃いのは九州地区と中部・関東地区である。分布パターンは平面的な地図上からは，琉球型，南方型，北方型，汎日本型，局所型に分けられる。それらの分布パターンと分類群との関係および，植物相との関係についてふれた。生育地を生態的（特に森林帯）に分別したもの（垂直分布）と平面的な地図上での分布（水平分布）を考察した。これらの植物ではそれらは密接に関係があることがわかった。分布要因としては，気候要因が重要であり，そのなかでも光と温度条件の必要が考えられるが，植物それ自身のトレランスも十分に考慮する必要があるだろう。