HOKKAIDO UNIVERSITY

Title	北海道植物志料 IX
Author(s)	宮部, 金吾; 工藤, 祐舜
Citation	札幌博物学会会報, 7(2), 128-135
Issue Date	1919-07-05
Doc URL	https://hdl.handle.net/2115/63034
Type	journal article
File Information	Vol.7No.2_003.pdf

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MATERIALS FOR A FLORA OF HOKKAIDO. IX.

By

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and

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北海道植物志料 IX.

宮部金吾

工藤祐舜

122. Abies sachalinensis Fr. Schm. Fl. Sachal. pp. 85, 86; Miyabe and Miyake, Fl. Saghal. p. 598.

Abies sachalinensis Masters, in Gard. Chron. n. 8. (1878) p. 588, fig. 97, Journ. Linn. Soc. XVIII. p. 517, fig. 26 et Bull. Herb. Boiss. VI. p. 273; Veitch, Man. Conif. p. 106, fig. 26; Sargent, For. Fl. Jap. p. 83; Kawakami, For. Trees Hokkaido pp. 192, 193; Matsum. Ind. Pl. Jap. II. 1. p. 5; Beissn. Handb. d. Nadelholzk. 2 Aufl. p. 188, fig. 41; Wilson, Conif. & Tax. Jap. p. 62.

var. *α.* **typica** Miyabe et Kudō.

Abies Veitchii Lindl. var. *sachalinensis* Fr. Schm. Fl. Sachal. p. 175, t. 4, figs. 13–17.

Abies sachalinensis Masters : Koidzumi, Pl. Sachal. p. 9; Takeda, Fl. Shikotan, p. 486.

Abies sachalinensis Masters, var. *nemorensis* Mayr, Monogr. Abiet. Jap. p. 43, t. 3, fig. 6, loco inferiore; Shirasawa, Icon. For. Trees Jap. II. p. 22; Beissn. Handb. d. Nadelholzk. 2 Aufl. p. 189.

? *Abies Veitchii* Masters, Bull. Herb. Boiss. VI. p. 273 (non Lindl. quoad Pl. in insula Kunashiri lect.).

Abies Akatodo Miyabe, in Sargent, Gard. & For. VI. p. 525, et For. Fl. Jap. p. 83.

Strobili cylindrici vel rarius elliptico-cylindrici, apice rotundati, plerumque 5–8.5 cm longi, ca. 2.1 cm in diametro, griseo-atramentarii usque cynaceo-nigri.

[Trans. of Sapporo Natural History Soc. Vol. VII, Part 2, Feb. 1919.]

Squamae mediae usque ad marginem integrum puberulento-puberulae, pedicellatae, reniformi-plano-convexae, parte superiore valde arcuatae, marginibus sinistroque dextro basin versis, submembranaceae, eroso-subdenticulatae, basi utrinque sinu tenui praeditae, cum pedicello 10 mm, sine eo 7 mm longae, ca. 15 mm latae; pedicelli cuneati, ca. 3.5 mm longi. Bracteae mediae squamis paullum longiores vel breviores, apice rectae vel breviter reflexae, pedicellatae, quadratae, leviter obcordatae, ca. 7 mm latae, 4 mm longae, medio apice acumine aceroso 1.5–2.5 mm longo praeditae, margine eroso-denticulatae; pedicelli cuneati, ca. 5 mm longae, apice 5 mm lati, parte inferiore squamis adnati. Semina obovata, 4.5–5 mm longa, 2.5–3 mm lata, alis flabellato-trapezoideis apice plerumque rotundatis vel truncatis, pallide atroviolaceis vel pallide fulgineo-atroviolaceis. 3–4 mm altis 6.3–6.5 mm latis.

NOM. JAP. *Akatodo, Nemuro-todomatsu, Nemuro-todo, Qnitodo.*

HAB. *Hokkaidō. Prov. Iburi:* Hentomunai National Forest (R. Sasaki![1] Dec. 1918); Mukawa National Forest (R. Sasaki! Jan. 1919).— *Prov. Hidaka:* Umbe National Forest (R. Sasaki! Jan. 1919); Horoidzumi (Maries 1879).— *Prov. Tokachi:* Tomamu National Forest, Rikubetsu-mura (H. Murayama![2] Sept. 7, 1918) —*Prov. Kushiro:* Kutcharo (K. Miyabe! Aug. 1915); Mt. Meakan (T. Kawakami! Aug. 1897); Sempōji (K. Miyabe! Aug. 1884); Mt. Atosanupuri (Y. Odagiri![3] Sept. 1916).—*Prov. Nemuro:* Kombumori (Y. Kudō! n. 3136 July 13, 1917); Otsuishi (K. Miyabe! Aug. 6, 1884); Onnebetsu (S. Ishino![4] Sept. 20, 1917; N. Nagane![5] Oct. 7, 1918).—*Prov. Kitami:* Abashiri (C. Suzaki![6] June 4, 1915); Oketo (C. Suzaki! June 11, 1915).

Kuriles. Isl. *Kunashiri:* Ruyabetsu (C. Yendo![7] Sept. 3, 1894).—Isl. *Shikotan* (T. Kitahara![8] 1895).—Isl. *Etorofu:* Peretarabets coast (K. Jimbo! June 1, 1891); Naibo (T. Kawakami! Aug. 29, 1898).

DISTRIB. Saghalin and Hokkaidō (including the Southern Kuriles).

In *Abies sachalinensis*, there are two distinct forms worthy of varietal ranks. From the range of their distribution and predominace, one of them may be called the northern form, while the other the southern. They are found in many places growing together in the same forest in different proportions. The materials on which Mayr based his descriptions and figures of what he had considered as the

1) 佐々木隆次郎。 2) 村山 元。 3) 小田切榮三郎。 4) 石野信太郎。 5) 永根信雄。
6) 須崎忠助。 7) 遠藤千尋。 8) 北原多作。

typical form of the present species were of the southern origin. They are said to have come from Nanaë near Hakodate. The figure of a matured cone given in his Monographie der Abietineen shows prominently exserted and recurved greenish bracts—a characteristic of the southern form—which are however strikingly different from the excellent figure of the cone of the type specimen from Saghalin as shown in Fr. Schmidt's Flora Sachalinensis. We are disposed to consider the Mayr's form as a good variety of the Saghalin Fir, and have treated it so in the present paper under the name, the var. *Mayriana*.

The difference between the var. *typica* and var. *Mayriana* is so prominent in many points that some day after more careful studies we may be induced to regard them as two distinct species. Full descriptions of matured cones and seeds of both varieties are given for comparison respectively under each variety.

In the var. *typica*, the relative length of the cone-scales and bracts, and the degree of the reflexion of the latter are quite variable, but the bracts are never so much exserted and reflexed as in the case of the var. *Mayriana*. In the extreme cases the bracts are completely included, or their tapering points only are slightly exserted. Such a case corresponds to the Mayr's var. *nemorensis*, which is very rarely met with.

One of us even after a careful search for this extreme form in the Province of Nemuro in the summer of 1917 could not find even one tree which showed entirely this character, except in one case in the Kombumori National Forest in the Province Nemuro, where he found some trees in which both included and exserted bracted cones were found together on the same tree. The Mayr's var. *nemorensis*, which has been a source of great trouble and confusion to both botanists and foresters should be erased as a rare extreme variation of the species, under consideration.

A distinguishing character between the two varieties of *Abies sachalinensis* seems also to be found in the shape of the leaves on the cone-bearing branches. In the var. *typica*, the tip of the leaf is acute or mucronate, while that of the var. *Mayriana* is emarginate or rounded.

The color of the wood in the var. *typica* is usually more or less tinged with a reddish color, while that of the var. *Mayriana* seems to be always white. The bark of the former is said to be thicker and has a tendency to split longitudinally,

presenting somewhat a reddish color in old trees. That of the latter, however, seems to retain its smooth surface and grayish white color even in old specimens. But the most prominent distinguishing characters between these two varieties are to be found in the shape, size and color of the cones, the relative length of the bracts and scales, the shape and size of the same, and also the shape and color of the seeds and their wings.

var. β. **Mayriana** Miyabe et Kudō, var. nov.

Abies sachalinensis Masters, form. *typica* Mayr, Monogr. Abiet. Jap. Reich. p. 42, t. 3, f. 6, loco superiore; Shirasawa, Ic. For. Trees Jap. I. p. 21, t. 6, f. 22–43.

Strobili cylindrici, apice rotundati, obtusi vel subito attenuati, 6–10 cm longi, 2.5–3.9 cm in diametro, nigro-virentes. Squamae mediae usque ad marginem superiorem integrum puberulento-puberulae, pedicellatae, reniformi-biconvexae, parte superiore valde arcuatae, marginibus sinistroque dextro submembranaceae, eroso-denticulatae, basi utrinque profundo sinu integro praeditae, cum pedicello ca. 12 mm, sine eo ca. 9 mm longae, ca. 18 mm latae; pedicelli oblongo-cuncati, ca. 5 mm longi. Bracteae mediae squamis longiores, apice valde reflexae, longe pedicellatae, quadratae, ca. 9 mm latae, 5 mm longae, medio apice uno acumine lineariforme ca. 2.5–3. mm longo praeditae, margine eroso-denticulatae; pedicelli 7–8 mm longi, plerumque in parte 1/3 pedicelli aequilati, 4 mm lati, subito cuneato-attenuati, parte inferiore squamis adnati. Semina oblongo-obovata, 6 mm longa, 3–4 mm lata, alis cuneato-trapezoideis, apice plerumque obliquo-truncatis vel leviter curvatis 4 mm altis 6.5–7 mm latis, pallide atropurpureo-fulvis v. flavo-castaneis.

NOM. JAP. *Todomatsu, Todo, Aotodo.*

HAB. *Hokkaidō. Prov. Oshima:* Nanaë (Mayr).—*Prov. Shiribeshi:* Iwanai-iwōzan (S. Hori![1] Aug. 21, 1888); Nakanosawa on the River Yoichi (T. Ishikawa! July 2, 1893); Raidentōge (Y. Tokubuchi! July 26, 1883).—*Prov. Ishikari:* Sapporo (Class' 80!); Source of the R. Ishikari (K. Jimbo! Sept. 1891); Mt. Yūbari (T. Ishikawa! June 1896); Utashinaitanzan (Y. Tokubuchi! Sept. 1892); Nopporo (S. Sato![2] Sept. 14, 1917 & Oct. 1918).—*Prov. Teshio:* The middle Teshio (K. Jimbo! 1889); Teshio (S. Hori! Aug. 30, 1887); River Kotanbetsu (T. Ishikawa! Sept. 1892).—*Prov. Iburi:* Rebungetōge (K. Miyabe! Aug. 17, 1890);

1) 堀 正太郎。 2) 佐藤 仙太郎。

Mukawa National Forest (R. Sasaki! Jan. 1919); Hentomunai National Forest (R. Sasaki! Sept. 1918).— *Prov. Hidaka:* Horoman (Y. Tokubuchi! Aug. 21, 1892); Shoya (Y. Tokubuchi! Aug. 17, 1892); Umbe National Forest, Samani (R. Sasaki! Jan. 1919).—*Prov. Tokachi:* Tomamu Forest, Rikubetsu-mura (H. Murayama! Sept. 7, 1918).—*Prov. Kitami:* Porokapenkenai, Utanobori (C. Suzaki! June 23, 1914); Oketo (C. Suzaki! June 11, 1915); Abashiri (C. Suzaki! May 29, 1915).

DISTRIB. Hokkaidō.

This variety is distributed mostly in the southern part of Hokkaidō, in the provinces of Oshima, Shiribeshi, Iburi and Ishikari, extending to the central and western portions of the island and even to the Ochotsk coast in some places.

The figures of the cone in the Mayr's and Shirasawa's works, though rather grotesque and diagrammatic, still show an attempt to delineate the characteristic feature of the variety. The Beissner's figures of the cones, as well as of the scales, bracts and leaf are the excellent representatives of those of the var. *Mayriana*, although the figure of the leafy branch, on which two cones were drawn as if they had been growing there, appears to us to have been copied from the Master's figures, for they are so similar to each other in many details. The Master's figures represent, however, the typical form of the Saghalin Fir. His materials were collected in 1879 by Maries in the vicinity of Horoizumi in the Prov. Hidaka.

123. Abies Wilsonii Miyabe et Kudō, sp. nov.

Abies nemorensis Miyabe et Kudō, in Miyabe & Miyake, Fl. Saghal. p. 598.

Abies sachalinensis Masters, var. *nemorensis* Wilson, Conif. & Tax. Jap. p. 63 (non Mayr).

Strobili elliptici, 5 cm longi, 2.5 cm in diametro, atro-cynanei vel violacei. Squamae mediae margine superiore integrae, plerumque medio pubescentes, pedicellatae, lenticulari-reniformi-biconvexae, parte superiore moderate arcuatae, marginibus sinistroque dextro submembranaceae, grosse eroso-denticulatae, basi utrinque sinu tenui integro praeditae, cum pedicello ca. 12 mm, sine eo ca. 8 mm longae, ca. 20 mm latae; pedicelli lineari-oblongi, apice cuneati, ca. 5–6 mm longi. Bracteae mediae squamis breviores, apice rectae, subquadratae ca. 3.5–4 mm longae, 6–7 mm latae, medio apice uno acumine breviter setoso ca. 1.5 mm longo, praeditae,

margine eroso-denticulatae; pedicelli lineari-oblongi, parte superiore leviter cuneati, 4–5 mm longi, apice 3–3.5 mm lati, omnes squamis adnati. Semina oblongi-elliptica, 6–7 mm longa, 3 mm lata, alis cuneato-trapezoideis apice truncatis vel rotundatis 3.5–4.5 mm altis, 5.5–6.5 mm latis, pallide atropurpureis.

NOM. JAP. *Karafuto-shirabiso, Yezo-shirabiso.*

HAB. *Saghalin.* Konuma (E. H. Wilson! n. 7318, Aug. 4, 1914); Naikotoru, West Coast (T. Miyake! Aug. 26, 1907).

DISTRIB. Saghalin.

In 1914, Mr. E. H. Wilson of the Arnold Arboretum kindly gave us an excellent specimen of what he considered as *Abies sachalinensis*, var. *nemorensis* Mayr, which he had collected at Konuma, near Toyohara in Saghalin. The tree is said to be growing mixed with *Abies sachalinensis*. Among the specimens collected by Mr. Tsutomé Miyake at Naikotoru in the west coast of Saghalin in 1907, we found also those of the same fir bearing well matured cones.

At the time of writing the "Flora of Saghalin", we availed ourselves of these specimens in delineating the characters of *Abies nemorensis* Miyabe et Kudō under the assumption, that it corresponds to the var. *nemorensis* of Mayr. But we found on a careful study of these Saghalin specimens many prominent differences between the typical Saghalin Fir and the plant under consideration, that we have come to the conclusion that the Wilson's Fir must be elevated to the specific rank.

Later, as we have remarked under the var. *typica* of *Abies sachalinensis*, we have found that the var. *nemorensis* Mayr is a rare abnormal form of *Abies sachalinensis* and should not be confounded with a new Saghalin Fir discovered by Messrs. Wilson and Miyake.

Although, according to Mr. Wilson, there are no apparent differences in the habit and general appearance of this fir and those of *Abies sachalinensis*, yet when we come to make a closer study of the cones and their parts, we could not help to consider them as two distinct species.

The elliptical, violet or bluish black cones with included bracts, with the fewer larger cone-scales which are slightly pubescent not along the outer upper margin, but a little lower down toward the middle, are quite characteristic. From *Abies Veitchii* Lindl., to which the cone of our fir shows a slight resemblance, we can easily distinguish it by the shape and size of its cone and its parts.

At present, the Wilson's Fir is restricted only to Saghalin, but there is a great probability that it grows also in the northern part of Hokkaidō.

We have a great pleasure in naming this interesting tree after our esteemed friend Mr. E. H. Wilson, a well known great explorer and ardent scholar of the Silva of the Far East.

摘　　要

182. Abies sachalinensis Fr. Schm. var. *α.* **typica** Miyabe et Kudō. **あかとど。ねむろとどまつ。ねむろとど。おにとど。**

本種は西暦 1868 年シュミット氏に依り樺太島より新種として發表せられたるものなり。其分布區域は北は樺太南千島より北海道本島東北部を經て南は石狩膽振兩國に及ぶ。產地の異るに從ひ自ら變化あり。若し極端なる兩形を採らば別種たるが如き觀を呈するものあり。毬果は圓壔形又は楕圓狀圓壔形にして直徑約 2.1 セ.メ あり其色は帶黑紺色乃至帶綠褐色、苞鱗抽出の度も亦種々にして其極端なるものに至りては其苞鱗全く種鱗の間に隱蔽せられ外部に顯れざるものあり、斯の如き場合は明かにマイヤー氏の特別に *Abies sachalinensis* Masters, var. *nemorensis* Mayr. として區別せるものにして根室國に發見せらる、然れどもかゝる場合は稀なるのみならず同一樹木にありてもかゝるものと然らざるものとを混生せる場合觀察せられたるを以て同氏の變種は之れを認むるに由なし。苞鱗の抽出に程度ありと雖も未だ**あをとど**の如く甚だしく抽出し背反せるものを見ず。種子の翼は紫色又は帶褐紫色を呈し又主軸上に生ぜる葉の先端は銳形微凸頭をなせるもの多し。本種の老木にして樹皮赤みを帶び厚くして縱に裂目を生じ材も亦赤みを帶ぶるものあり方言**あかとど**と呼ぶ。本種の樹冠は**あをとど**に比し密なり。

var. *β* **Mayriana** Miyabe et Kudō, **とどまつ。とど。あをとど。**

本道西南部に多く尙北見天鹽及十勝等の諸國に及ぶ。此變種はマイヤー氏

の *Abies sachalinensis* Masters. と認定せるものなり。毬果は圓壔形にして直徑2.5-3.9 セ.メ 其色は帶黑綠色、其苞鱗は著しく抽出し先端背反す。種子の翼は帶黃褐色又は帶紫黃褐色なり。葉の先端は主軸上に生ぜるものと雖も概ね微凹頭なり。樹皮は薄くして且灰白色を呈し、材は殆んど白色に近し。以上の特長に依り容易に前者と區別し得べきのみならず他日多數の材料を得研究の結果別種となし *Abies Mayriana* と云ふ名稱を以て呼ぶの時なきを保し難し。

123. Abies Wilsonii Miyabe et Kudō. **からふとしらびそ。えぞしらびそ。**

本種は農學士三宅勉氏並に米人ウヰルソン氏に依り樺太に於て發見せられたり。毬果の外觀マイヤー氏の *Abies sachalinensis* Mast. var. *nemorensis* Mayr に類似し**あかとど**とは著しく異るを以て樺太植物誌に於ては *Abies nemorensis* Miyabe et Kudō となしたりき。爾來此の問題に關し注意を怠らざりしが精査の結果マイヤー氏の *Abies sachalinensis* Mast. var. *nemorensis* Mayr は本種に關係なき別の種類にしてシユミツト氏の *Abies sachalinensis* Fr. Schm. に外ならざるを發見せり。依りて本種には別に前記ウヰルソン氏に因み *Abies Wilsonii* なる名稱を附せり。是れ完全なる材料を供給せしウヰルソン氏に謝し尙ほ同氏の多年極東產樹木の探檢及研究の功績に對し敬意を表せんが爲めなり。毬果は稍圓形にして其色は帶紫紺色、苞鱗は全く種鱗の中に隱れ僅かに其先端のみを顯すに過ぎず。種鱗の先端は緩かに彎曲するのみならず其形狀及び大さ共に**あかとど**及**あをとど**と異る。種子の翼は淡紫紺色にして巾狹し。毬果は**あかとど**若しくは**あをとど**とは全く異るものにして寧ろ本州產の**しらべ**に近し。然れども精査せば**しらべ**と混ずべきものに非ず。本種の材料は凡て樺太より得たるものなりと雖も後日本道に於ても發見せらるべしと思考せらる。