

Studia Orchidacearum Japonicarum. X.^{1,2}

Orchidaceae Formosanae Novae vel Minus Cognitae.

Auctore

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With 1 Text-figures.

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84) *Cephalanthera alpicola* FUKUYAMA, sp. nov.

Terrestris, erecta, 20–40 cm. alta, radicibus filiformibus rigidulis flexuosis, caule stricto vel substricto glabro basi vaginæ paucis amplectentibus instructo ceterum sublaxe (5–8)-foliato.

Folia erecto-patentia vel suberecta, elliptico-lanceolata vel lanceolata, apice acuta vel acuminata, basi contracta, c. 4–10 cm. longa, 6–20 mm. lata, in exsiccato membranacea, utrinque glabra, multi-nervata.

Racemus erectus, glaber, laxe vel subdense (3–12)-floratus, bracteis plerumque minutis deltoideis acutis sed interdum inferioribus lineari-lanceolatis et pedicellos paulo superantibus, pedicellis cum ovariiis 5–10 mm. longis rectis glabratiss.

Flores subclausi, albidi, erecto-patentes vel suberecti. Sepala aequilonga et subaequiformia, anguste oblonga, e medio apicem versus sensim angustata, ad summam acuta, basi paullo contracta, c. 1 cm. longa, medio 3 mm. lata, membranacea, glabra, 5-nervata. Petala elliptica, apice acuta, basi contracta, quam sepala breviora, c. 8 mm. longa, medio 4 mm. lata, membranacea, glabra, 5-nervata.

Labellum quam sepala bene brevius, c. 6–7 mm. longum, medio trilobum; hypochilium obtuse saccato-concavum et extra basin sepalorum lateralium plus minusve prominens, intus medio rugoso-carinatum, lobis lateralibus late et oblique triangulato-ovatis apice rotundato-obtusis margine integris, lobo intermedio (epichilio) lobis lateralibus bene majore ovato-semiorbiculato apice obtuso et recurvo c. 3 mm. longo medio 5 mm. lato lamellis 3–5 subparallelis e basi usque ad medium instructo infra apicem papillis minutissimis dense consperso. Columna erecta, glabra, semiteres, cum anthera vix 7 mm. alta. Capsula erecta, elongato-cylindrica.

Nom. Jap. Hatunatu-ginran (nov.).

1) Continued from Bot. Mag. (Tokyo), 51 (1937), 906.

2) The expense of the study has been partly defrayed from the subsidy granted by the Japan Society for the Promotion of Scientific Research.

vulum, apice obtusum, glabrum, 8-11 mm. longum. Columna dimidium petalorum, paullo superans, erecta, semiteres, basi paulo contracta; anthera convexa; pollinia 4, ovoidea.

Nom. Jap. Nioi-hitotubokuro (nov.).

Hab. Formosa: Praef. Taihoku; in *Tsugetis* monte Nanko-taizan, inter Bunakke et Kiritto, in altitudine c. 2400 m. s. m., (N. FUKUYAMA! no. 6114. Typus in Herb. Univ. Imp. Taihokensis).

The present species is rarely found in the lauri-aciculisilvae of north Formosa. It resembles to *T. japonica* MATSUM., but clearly distinguishable from it by its much larger flowers.

86) **Pogonia minor** MAKINO, in Bot. Mag. (Tokyo) XXIII. (1909) p. 137; MORI, Enum. Pl. Cor. (1922) p. 106; MAK. et NEM. Fl. Jap. ed. 2. (1931) p. 1673; MIYABE et KUDO, Fl. Hokkaido & Saghalien III. (1932) p. 372.

Pogonia japonica REICHB. f. var. *minor* MAKINO, in ibidem XII. (1898) p. 103; YABE, in ibidem XVII. (1903) p. 143; MATSUMURA, Ind. Pl. Jap. II. 1. (1905) p. 262; SCHLECHTER, Orch. Sino-Jap. Prodr. (1919) p. 144; MASAMUNE, Prel. Rep. Veg. Yak. (1929) p. 62, Florist. and Geobot. Stud. Yak. (1934) p. 576.

Pogonia ophioglossoides A. GRAY var. *minor* MAKINO, in ibidem XII. (1898) p. 103.

Nom. Jap. Yama-tokisô.

Hab. Formosa: Praef. Takao; in herbis siccis subalpinis Minao-pâran prope cacumen montis Kanzan, inter Nakanoseki et Hinokitani, in altitudine c. 2300 m. s. m., (N. FUKUYAMA! Jul. 27, 1935. no. 5731).

Distrib. Formosa, Kyûsyû, Sikoku, Honsyû, Hokkaidô.

In Formosa, the plant only occurs in the subalpine meadows. I have now little doubt, however, that this plant is precisely conspecific with that one intended by Dr. MAKINO, because, as far as my materials are concerned, there exists a slight difference in the floral colour.

87) **Yoania japonica** MAXIM. Mém. Biol. VIII. (1873) p. 647.

var. **squamipes** FUKUYAMA, var. nov.

Differt a forma typica caule e basi apicem versus dense squamato, floribus in apice caulis conferte subcapitatim dispositis.

Nom. Jap. Hanabi-syôkiran (nov.).

Hab. Formosa: Praef. Tainan; in laurisilvis ad infimum montem Arisan, prope Nyautina, in altitudine 1500 m. s. m., (K. SEGAWA! Mai. 8, 1937. n. 6400. Typus in Herb. Univ. Imp. Taihokensis).

Only two individuals were obtained by Mr. K. SEGAWA at one spot in the laurisilvae of central Formosa. It is allied to *Yoania japonica* MAX.,

but the shorter racemes and densely arranged scales make it different. In the floral structure, though very difficult to examine after drying, I cannot detect any constant difference between typical form and this variety.

88) **Liparis amabilis** FUKUYAMA, sp. nov.

Terréstris, pusilla, c. 5 cm. alta, rhizomate abbreviato, pseudobulbis valde approximatis globosis lateraliter paulo compressis c. 1 cm. altis a reliquis squamarum obtectis apice uni-foliatis, foliis erecto-patentibus ovatis vel ovato-ellipticis apice acutis vel obtusis basin versus in petiolum brevem vaginantem decurrentibus tenuiter membraneis petiolis inclusis c. 1-2 cm. longis utrinque glabris.

Scapus folia superans, strictus, glaber, anceps, apice (1-2)-florus, bracteis minimis deltoideis acutis glabris, pedicellis cum ovariis gracilibus erecto-patentibus bracteis multo superantibus c. 6-10 mm. longis glabris.

Flores late aperti, speciosi, glabri; sepala linearia, revoluta, apice acuta vel obtusiuscula, c. 1.2 cm. longa, medio c. 3 mm. lata, membranacea, glabra, integra, tri-nervia; petala sepalis subaequilonga sed bene angustiora, c. $\frac{1}{2}$ mm. lata, membranacea, glabra, integra, uni-nervia.

Labellum amplum, supra albescens et rubro- vel potius purpureo-lineatum, orbiculatum, apice rotundatum, ad summam mucronatum, ad basin paulo cuneatum, ad infimam sagittatum, margine perminute ciliolatum, c. 12 mm. in longitudine et latitudine, bi-lamellatum, lamellis parallelis basi confluentibus crassiusculis supra basin ad supra medium decurrentibus, partibus sagittiformibus basilaribus brevibus c. $1\frac{1}{2}$ mm. longis obtusis latere posteriore oblique excisis. Columna anteriore arcuata, c. 5 mm. longa, glabra, basi valde incrassata, auriculis abbreviato-truncata. Capsula triquetra, oblongoidea, pedicello paulo longior, c. 1 cm. longa.

Nom. Jap. Kurenai-suzumusi (nov.).

Hab. Formosa: Praef. Taihoku; in laurisilvis humidis prope cacumen montis Kapo-san, in altitudine 900 m. s. m., (SUZUKI-TOKIO! Apr. 13, 1935. no. 6397. Typus in Herb. Univ. Imp. Taihokensis).

A pretty dwarf plant with fairly large white flowers, remarkable for the ample lip coloured with rose purple veins. It seems to be nearest to *L. Sasakii* HAY., but it is distinguished from it chiefly by the floral characters.

89) **Bulbophyllum Tokioi** FUKUYAMA, in Bot. Mag. (Tokyo) XLIX. (1935) p. 439.

form. **alboviride** FUKUYAMA, form. nov.

Differt a forma typica scapis et floribus albo-viridibus.

Nom. Jap. Ao-hagakure-mamedutaran (nov.).

Hab. Formosa: Praef. Sintiku; in laurisilvis prope Inoue; in altitu-