Some Ferns from the Mountainous Regions of Formosa.

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In March of the present year, I wrote a paper entitled "Flora Montana Formosæ¹⁾" where I have given some few ferns which were determined previously. Since that time, I have had many collections of ferns from the mountainous districts of the island. The following accounts are given as the result of the study of the materials which were not written in the paper above mentioned.

The species, which were previously recorded in the *Enumeratio Plantarum Formosanmarum*²⁾, or in the *Flora Montana Formosæ*, are given here without reference. Some species which are new to the Formosan flora are mentioned with full references. The ferns here given are all seventy five species; some are recorded previously from the island, others are new to the Formosan flora, and a few are found to be new to science. Among the species which are new to the island, the following five species are worthy mentioning particularly on account of their beautiful and well defined forms. They are *Acrophorus stipellatus* MOORE, *Monachosorum subginitatum* KUHN, *Polypodium cucullatum* NEES, and *Davallia Clarkei* BAKER. The former two genera are especially interesting, for the genera themselves are not only new to the Formosan flora, but also to the Japanese flora. *Monachosorum* is worthy of special attention, for it bears some resemblance to

¹⁾ HAYATA, B.—*Flora Montana Formosæ*, in the *Journal of the college of Science Imperial University of Tōkyō*, Vol. XXV. Art. XIX, 270 pages, with 41 plates.

²⁾ MATSUMURA, J. et HAYATA, B.—*Enumeratio Plantarum Formosanmarum*, in the *Journal of the college of Science, Imperial University of Tōkyō*, Vol. XXII, 700 pages, with 18 plates.

Polystichum Maximowiczii DIELS and *P. flagellare* C. CHR.—the species which are of especial character, peculiar to themselves, and are very different from any other species of *Polystichum*. The resemblance of these handsome ferns and *Monachosorum* is indeed very great, and I have wondered if the former two may not be referred to the latter genus. I shall return to this matter later on. Another interesting fern to be mentioned is *Cryptogramma Brunoniana* WALL. which resembles closely *C. crispa* R. BR. which is known to us from Hokkaido. As to the geographical distribution of this interesting fern, I shall refer to afterwards.

Ophioglossaceæ.

OPHIOGLOSSUM LINN.

Ophioglossum nudicaule LINN. f.; MATSUM. et HAYATA, Enumeratio Plantarum Formosanarum in the Journal of the College of Science, Imperial University of Tōkyō, Vol. XXII. p. 557.

HAB. in monte Morrison, ad 9000 ped. alt., leg. T. KAWAKAMI et U. MORI, Oct. 1906, (No. 1866).

BOTRYCHIUM SW.

Botrychium ternatum SW.; HOOKER et BAKER, Synop. Fil. p. 448; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I.—4, p. 471, et Fl. Centr. Chin. in ENGL. Bot. Jahrb. XXIX. p. 209; CHRIST, Farn. Erd. p. 366.

Osmunda ternata THUNB. Fl. Jap. p. 329, t. 32.

HAB. in monte Morrison, leg. T. KAWAKAMI et U. MORI, Oct. 1906, (No. 1865).

DISTRIB. Japan, Central China, and Himalaya. CHRISTENSEN questions the occurrence of this species in Argentine.

New to the Formosan flora. Although the *Botrychium* is quite common in the low-lands of Japan, it has never been found in the plains of Formosa.

Marattiaceæ.*ANGIOPTERIS* HOFFM.

Angiopteris evecta HOFFM.; MATSUM. et HAYATA, l.c.p. 558.

HAB. Toroku: Mt. Hōwō, leg. T. KAWAKAMI et U. MORI, Nov. 1906, (No. 2339).

Schizæaceæ.*LYGODIUM* SW.

Lygodium scandens SW.; MATSUM. et HAYATA, l. c. p. 561.

HAB. Nantō: Mokuriran, leg. T. KAWAKAMI, et U. MORI, Aug. 1906, (No. 2395).

Gleicheniaceæ.*GLEICHENIA* SM.

Gleichenia glauca HOOK.; MATSUM. et HAYATA, l. c. p. 562.

HAB. in monte Morrison, ad 6000 ped. alt.; leg. T. KAWAKAMI et U. MORI, Oct. 1906, (No. 1870), et leg. G. NAKAHARA, Dec. 1906; Kakō, leg. G. NAKAHARA, Aug. 1905, (No. 217).

Rather robust form of the species, with the pinnae 20 cm. long and 30 cm. wide.

Hymenophyllaceæ.*HYMENOPHYLLUM* SMITH.

Hymenophyllum polyanthos SW.; MATSUM. et HAYATA, l.c. p. 569.

HAB. Tōzan, in montibus Morrison, leg. G. NAKAHARA, Oct. 1906.

Cyatheaceæ.*ALSOPHLA* R. BR.

Alsophila podophylla HOOK.; MATSUM. et HAYATA, l.c. p. 572.

HAB. Taitō: Shinsui, leg. T. KAWAKAMI, April. 1907, (No. 2504).

Polypodiaceæ.*ACROPHORUS*

Acrophorus stipellatus (WALL.) MOORE. "Gard. Chron. (1854) p. 135 "; CHRISTENSEN Ind. Fil. p. 4.

Davallia stipellatus "WALL. List n. 260, (1828)."

Davallia nodosa HOOK. ; HOOK. et BAKER, Syn. Fil. p. 92.

Acrophorus nodosus PRESL. ; BEDD. Fern. Brit. Ind. t. 93 ; CHRIST, Farn. d. Erd. p. 285 ; DIELS, in ENGL. Nat. Pfl.-fam. p. 164.

Aspidium nodosum BLUME, Enum. p. 171.

HAB. Suizan in montibus Morrison, leg. S. NAGASAWA, Oct. 1905.

DISTRIB. : North India and Malaisia.

(To be continued.)