

Flora of Izu Islands

1. Pteridophyta (3)

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(With 4 Text-figures)

伊豆諸島植物誌

1. シダ植物(3)

常谷幸雄* 大場秀章**

Family Davalliaceae

Nephrolepis SCHOTT

1. *Nephrolepis auriculata* (LINN.) TRIMEN, J. Linn. Soc. Bot. **24**: 152 (1887); Alston et Bonner, *Candollea* **15**: 210 (1956); Ohwi *50* (1957); Tagawa *68 et 235* (1959)—Satomi and Maruyama, *J. Geobot.* **11**: 91 (1962); Ute and Naito, *J. Geobot.* **13**: 92 (1965).

"*Nephrolepis cordifolia* (LINN.) PRESL"—Christ, *Warburg's Monsunia* **1**: 84 (1900); Hayashi, *Yaso* **3**: 35 (1937); Tuyama, *J. Jap. Bot.* **14**: 776 (1938); Mizushima, *Mis. Rep. Res. Inst. Nat. Res. n. 38*, 115 (1955).

Herbarium specimens: **Isl. Niijima** (Y. Jotani, 1932 Nov. *JOT*), **Isl. Miyakejima** (Y. Jotani, 1932 Aug. *JOT*, ?, 1887 May *TI*), **Isl. Hachijojima** (T. Nakai, 1920 Jun. *TI*, M. Ogata, 1921 Sept. *TI*, T. Tuyama, 1933 Jul. *TI*, Y. Jotani, 1930 Dec. *JOT*, H. Ohba 3320, 1967 Mar. *TOFO*, 69735, 1969 Jul. *TI* etc), **Isl. Aogashima** (S. Yamaguchi, 1930 Aug. *TI*, Y. Jotani, 1958 Jul. *JOT*).

This species occurs on vertical surface of moist rocks, on sunny forest-floors or in clearings by paths.

The adopt of the name of this species as *N. auriculata* is followed Alston et al. (1956), who pointed out that the name of *N. cordifolia* was based on a figure of Petiver's copied from Plumier's t. 71 and that it apparently represented *N. occidentalis*.

Family Aspleniaceae

Asplenium LINN.

1. Frond simple.
 2. Frond with submarginal connecting vein.....1 *A. antiquum*
 2. Frond without submarginal connecting vein.....6 *A. scolopendrium*
1. Frond compound.
 2. Frond pinnate.

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3. Rhizomes long-creeping; stipes remote.....8 *A. unilaterale*
 3. Rhizomes short-creeping or mostly erect.
 4. Pinnae 2 cm long.....3 *A. normale*
 4. Pinnae 10 to 15 cm long.....10 *A. wrightii*
 2. Frond 2-pinnatifid or more.
 3. Stipes at least in the lower portion purple-brown, lustrous.....2 *A. incisum*
 3. Stipes green throughout, rarely brown at the base, dull.
 4. Frond herbaceous; sori solitary on the 1-veined lobes.
 5. Frond lanceolate; the rachis usually prolonged; pinnae simply
 pinnate.....4 *A. prolongatum*
 5. Frond ovate to broadly ovate, not gemmate.
 6. Frond usually 30 cm long or less; ultimate pinnules linear oblong
 to lanceolate.....5 *A. ritoense*
 6. Frond over 50 cm long; ultimate pinnules rhombic-ovate.....7 *A. trigonopterum*
 4. Frond firmly herbaceous; sori few to many on the few to many
 veined ultimate lobes.....9 *A. wilfordii*
- 1. *Asplenium antiquum* MAKINO**, J. Jap. Bot. **6**: 32 (1925); Ohwi 142 (1957); Tagawa 147 et 177 (1959)—Satomi and Maruyama, J. Geobot. **11**: 93 (1962). *Neottopteris antiqua* (MAKINO) MASAMUNE: Mizushima, Mis. Rep. Res. Inst. Nat. Res. n. 38, 115 (1955).

"*Neottopteris rigida* FÉE"—Hayashi, Yaso **3**: 35 (1937).

Herbarium specimens: **Isl. Miyakejima** (Y. Jotani, 1932 Jul. *JOT*), **Isl. Mikurajima** (Y. Jotani, 1934 Jul. *JOT*, JBL, 1967 Jul.-Aug. *JOT*, *TI*, H. Ohba 677183, 1967 Jul. *TI* etc), **Isl. Hachijojima** (T. Nakai, 1930 Jul. *TI*, H. Sakurai, 1887 May *TNS*), **Isl. Aogashima** (K. Asanuma, 1956 Oct. *JOT*, M. Mizushima, 1954 Nov. *TI*, Y. Jotani, 1958 Jul. *JOT*).

In Isl. Mikurajima, this species is locally abundant on tree trunks, humus-rich rocks or even so on moist and humus-rich-floors of deep ever-green forests near streams.

2. *Asplenium incisum* THUNB., Trans. Linn. Soc. **2**: 342 (1794); Ohwi 37 (1957); Tagawa 149 et 178 (1959)—Hayashi, Yaso **3**: 34 (1937), Satomi and Maruyama, J. Geobot. **11**: 93 (1962), Ute and Naito, J. Geobot. **13**: 93 (1965).

Herbarium specimens: **Isl. Ohshima** (Y. Jotani, 1931 May *TNS*, 1927 Mar. *JOT*), **Isl. Toshima** (Y. Jotani, 1933 Aug. *JOT*), **Isl. Niijima** (Y. Jotani, 1932 Nov. *JOT*, *TNS*), **Isl. Shikinejima** (Y. Jotani, 1933 Aug. *JOT*), **Isl. Kouzushima** (Y. Jotani, 1932 Aug. *TNS*, *JOT*), **Isl. Miyakejima** (Y. Jotani, 1932 Aug. *JOT*), **Isl. Hachijojima** (A. Yamamoto, 1930 Jul, *TI*, T. Tuyama, 1936 Mar. *TI*, Y. Jotani, 1931 Dec. *JOT*, *TNS*, M. Shirai, 1887 May *TNS*).

This species occurs on slightly sunny banks or stone walls, and it seems to be rare in our botanized area.

3. *Asplenium normale* DON, Prodr. Fl. Nepal. **7** (1825); Ogata, Ic. Fil. Jap. **5**, pl. 207 (1933); Ohwi 136 (1957); Tagawa 148 et 178 (1959)—Satomi and Maruyama, J. Geobot. **11**: 93 (1962).

Herbarium specimens: **Isl. Toshima** (H. Noguchi, 1956 Jul. KAG), **Isl. Mikurajima** (Y. Jotani, 1934 Jul. *JOT*, *TNS*, N. Satomi, 1963 Oct. *TI*, H. Ohba 677142, 1967 Jul. *TI* etc), **Isl. Hachijojima** (M. Ogata, 1921 Sept. *TI*, Y. Momiyama, 1955 Aug. *TNS*, H. Ohba

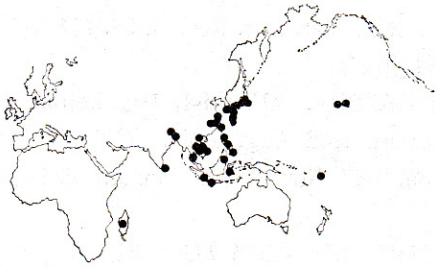


Fig. 3. Distribution of *Asplenium normale* DON.

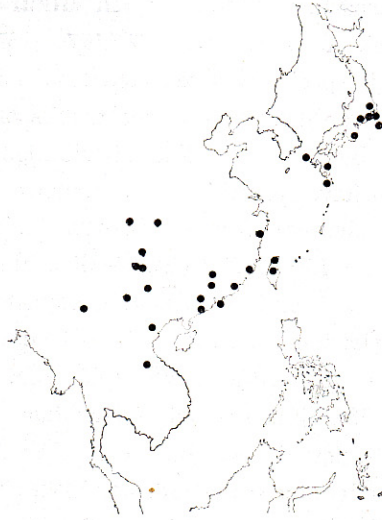


Fig. 4. Distribution of *Asplenium prolongatum* HOOK.



Fig. 5. Distribution of *Asplenium wilfordii* METT ex KUHN.

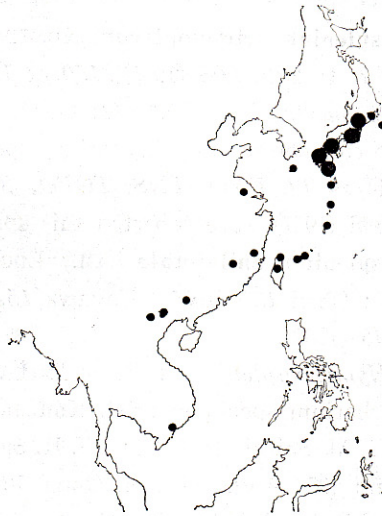


Fig. 6. Distribution of *Asplenium wrightii* EATON ex HOOK.

3228, 1967 Mar. TI).

This widely distributed species as shown Fig. 3, in our botanized area, grows on mossy rocks or old tree trunks in deep ever-green forests dominated *Castanopsis cnspidata* var. *sieboldii* and *Machilus thunbergii*.

5. ***Asplenium prolongatum*** HOOK., 2nd Cent. Ferns, t. 42 (1860); Ohwi 137 (1957); Tagawa 150 et 178 (1959).

"*A. achilleifoljum* C. CHR."—Satomi and Naito, J. Geobot. 10: 80 (1961).

Herbarium specimens: **Isl. Mikurajima** (Y. Jotani, 1934 Aug. *JOT*, *TNS*, N. Satomi, 1962 Jul. *KAG*, H. Ohba 677197, 1967 Jul. *TI* etc).

This species was reported from Isl. Ohshima (Satomi et al. 1961). In Isl. Mikurajima, it grows on dead mossy tree trunks of *Castanopsis* or on mossy humic rocks in deep forests by streams. The distribution of this species (Fig. 4) and *Asplenium wrightii* (Fig. 6) have something in common one another.

5. **Asplenium ritoense** HAYATA, Ic. Pl. Formos. 4: 226, f. 156 (1914); Ohwi 138 (1957); Tagawa 150 et 179 (1959)—Mizushima, Mis. Rep. Res. Inst. Nat. Res. n. 38, 114 (1955).
 "A. davallioides HOOK."—Hayashi, Yaso 3: 34 (1937).

Herbarium specimens: **Isl. Ohshima** (K. Naito, 1960 Nov. *JOT*), **Isl. Miyakejima** (K. Hayashi, 1934 Aug. *TNS*, 1937 Feb. *TNS*, Y. Jotani, 1932 Aug. *TNS*, *JOT*, H. Ohba 62711, 1962 Jul. *TI*), **Isl. Aogashima** (M. Mizushima, 1954 Nov. *TI*, T. Suzuki, 1958 Jul. *TNS*, Y. Jotani, 1958 Jul. *JOT*, *TNS*).

6. **Asplenium scolopendrium** LINN., Sp. Pl. 2: 1079 (1753); Ohwi 141 (1957).

Phyllitis scolopendrium (LINN.) NEWN.: Tagawa 153 et 239 (1959)—Satomi, J. Geobot. 12: 110 (1964).

Herbarium specimen: **Isl. Ohshima** (T. Naito, 1962 Aug. *Herb. Univ. Kanazawa*).

This species occurs at a peculiar place in a rock crevice covered densely woods.

7. **Asplenium trigonopterum** KUNZE, Bot. Zeit. 1848: 524; Tagawa, Acta Phytotax. Geobot. 4: 202, 205 (1935), 150 et 179 (1959); Ohwi 138 (1957).

A. mertensianum KUNZE: Ogata, Ic. Fil. Jap. 6: pl. 257 (1935).

We can not see any herbarium specimens collected in our botanized area in such herbaria as *TI*, *KYO*, *TNS*, *TOFO*, *JOT* and *KAG*. Tagawa (1935 and 1959) Ogata (1935) and Ohwi (1957) were reported this species from Isl. Hachijojima, respectively.

8. **Asplenium unilaterale** LAM., Enc. 2: 305 (1786); Ogata, Ic. Fil. Jap. 5, pl. 210 (1933); Ohwi 135 (1957); Tagawa 152 et 179 (1959)—Satomi and Maruyama, J. Geobot. 11: 93 (1962).

Hymenoasplenium unilaterale (LAM.) HAYATA: Hayashi, Yaso 3: 35 (1937).

Herbarium specimens: **Isl. Kouzushima** (JBL, 1965 Jul. *JOT*), **Isl. Miyakejima** (? , 1887 May *TI*, M. Shirai, 1887 Apr. *TI*, H. Sakurai, 1887 Apr. *TNS*, K. Hayashi, 1934 Aug. *JOT*, Y. Jotani 1932 Aug. *JOT*, H. Ohba 627 1962 Jul. *TI*), **Isl. Mikurajima** (Y. Jotani 1934 Aug. *JOT*, *TNS*, Y. Ando 1967 Jul. *TI*), **Isl. Hachijojima** (T. Tuyama, 1933 Jul. *TI*, A. Yamamoto, 1930 Jul. *TI*, J. Yokoyama, 1955 Feb. *TI*, *TNS*, M. Ogata 1921 Sept. *TI*, J. Ohwi and N. Maruyama, 1949 May *TNS*, Y. Jotani, 1930 Dec. *JOT*, *TNS*, Y. Momiyama, 1955 Aug. *TNS*, S. Hotoh 5910, 1952 May *TNS*, H. Ohba 3209, 1967 Mar. *TOFO*, 3273, 3304 1967 Mar. *TI*, *YCM*).

This very widely distributed and variable species, in our botanized area, occurs on wet rocks or on mossy humid banks by streams in deep forests.

9. **Asplenium wilfordii** METT. ex KUHN, Linnaea 36: 94 (1869); Ohwi 139 (1957); Tagawa 151 et 180 (1959)—Satomi and Maruyama, J. Geobot. 11: 93 (1962).

Herbarium specimens: **Isl. Mikurajima** (N. Satomi, 1962 Jul. *TI*, H. Ohba 677171, 1967 Jul. *TI* etc).

This species occurs on mossy wet tree trunks and rocks by streams in dense *Castanopsis-Machilus*-forests. Its distribution is shown in Fig. 5.

10. *Asplenium wrightii* EATON ex HOOK., Sp. Fil. 3: 113, t. 182 (1860): Ohwi 140 (1957): Tagawa 149 et 180 (1959)—Hayashi, Yaso 3: 34 (1937); Satomi and Maruyama, J. Geobot. 11: 93 (1962).

Herbarium specimens: **Isl. Miyakejima** (K. Hayashi, 1934 May *JOT*), **Isl. Mikurajima** (Y. Jotani, 1934 Aug. *JOT*, *TNS*, N. Satomi, 1963 Oct. *TI*, H. Ohba 677140, 1967 Jul. *TI* etc).

This species occurs in shady forests. This distribution is something like to *Asplenium prolongatum* as shown Fig. 4 and 6.

Camptosorus LINK.

1. *Camptosorus sibiricus* RUPR., Distr. Crypt. Vas. Ross. 45 (1845): Ohwi 142 (1957): Tagawa 153 et 188 (1959).

Herbarium specimen: **Isl. Ohshima** (K. Naito, 1960 Nov. *JOT*).