

Syo KUROKAWA*: **Anaptychia (lichens) and their allies of
Japan (4)****

黒川 道*: 日本産グシゲシゴグ属地衣 (4)**

10. Anaptychia Subheterochroa KUROKAWA sp. nov.

var. **subheterochroa**

'*Anaptychia dendritica* var. *lamelligera* Vain.' in Philipp. Journ. Sci. Bot. **8**: 107 (1913) excl. basonym.

Anaptychia dendritica var. *colorata* f. *esorediosa* Kurokawa in Journ. Jap. Bot. **30**: 256 (1955).

Thallus cinerascens vel glaucescens, usque 5~13 cm latus, substrato laxè adnatus, laciniatus; laciniae crebre dichotome vel saepe subdigitatim divisae, sublineares, superne planae vel leviter concavae, laevigatae, 0.7~2 mm latae et 150~230 μ crassae, in centro thalli hic illic lacinulis secundariis instructae, lacinulis brevibus, thallo concoloribus, apice rotundatis; subtus ecorticatae, albiae sed in centro interdum caesio-fuscae et in apicibus tantum ochraceae vel fulvescentes, in marginibus rhizinis nigris, simplicibus vel squarroso-ramosis, 1~3 mm longis ornatae.

In sectionibus transversis cortex superior aequaliter incrassatus, internus haud dentato flexuosus, 30~80 μ crassus, parte exteriore obscure cinerae 15~25 μ crassa; stratum gonidiale continuum, 15~30 μ crassum, gonidiis, 6~9 μ in diam.; stratum medullare 100~130 μ crassum.

Apothecia 1~4 mm lata, superficialia, sessilia vel substipitata, margine lacunata, lacinulis intus (subtus) saepe partim fulvescentibus, disco fusco-brunnescenti, leviter albo-pruinoso. Hymenium hyalinum, 180~200 μ altum, J + coeruleus; epithecium brunnescens; excipulum proprium una cum hypothecio ca 30 μ altum, J-; paraphyses filiformes, in apicibus parum incrassatae, simplices; asci oblongo-clavati, magnitudine 150~180 \times 29~33 μ , 8-spori; sporae brunnescentes, ellipsoideae, medio levissime constrictae, 1-septatae, 2-loculares, loculis obovatis, demum mox vesiculis parvis terminatis, magnitudine 35~46 \times 16~20 μ .

Reaction: thallus K + yellow; med. K + yellow afterwards red, PD + orange yellow; yellow part of undersurface K + purple.

Chem. ingr.: atranorine, zeorin, norstictic acid, salazinic acid and indetermined

* Research Institute for Natural Resources, Shinjuku-ku, Tokyo, 資源科学研究所

** 資源科学研究所業績 第 964.

yellow substance.

Hab. : on mossy rocks or on bark of trees.

Distr. : Japan (Honsyu, Sikoku, Kyusyu), Formosa and Philippines.

Specim. exam. : JAPAN. Honsyu. Prov. Izu : Suisyoti, Amagi-Pass, M. Togashi, Aug. 9, 1955—holotype (Kurok) and isotype (Asah and TNS); Amagi-Pass, Kurokawa 58609, 58610 (Kurok). Prov. Ise : en route from Momonoki to Senhirotoge, Oosugidani-mura, Take-gun, M. Tagawa 327 (KYO). Prov. Kii : Komori-dani, Ryujin-mura, Hidaka-gun, M. Tagawa & K. Iwatsuki 501-b (KYO). Sikoku. Prov. Tosa : Gozaisyo- no- mori, Hata-gun, I. Yoshimura 136 (Yoshim). Kyusyu. Prov. Tikuzen : Mt. Hikosan, 00 m, M. Omura 903 (Asah). Isl. Yakusima : Hananoego, F. Fujikawa (Asah); Kosugi-dani, 700 m, M. Omura 690, 691, 695 (Asah). Isls. Amami : Mt. Tampatsuzan, Isl. Tokunoshima, M. Tagawa & K. Iwatsuki 2714 (KYO). FORMOSA : M. Ogata—holotype of *A. dendritica* var. *colorata* f. *esorediosa* (Asah); Sinsuieii, T. Masuda (Asah). PHILIPPINES. Mindanao : Subprov. Butuan, C. M. Weber 1398 (TUR : Herb. Vainio, no. 8008).

A. subheterochroa var. *subheterochroa* is similar to *A. fulvescens* var. *rottblolii*, from which it is distinguished by producing norstictic and salazinic acids. The apical part of undersurface of laciniae is usually yellow containing yellow pigment, which is identical with those of *A. fulvescens* and *A. heterochroa*. The pigment is K+purple. The distribution range seems to be restricted in eastern Asia.

var. **propagulifera** (Vain.) Kurokawa **comb. nov.**

Anaptychia dendritica var. *propagulifera* Vain. in Philipp. Journ. Sci. Bot. **8**: 107 (1913).

Iaciniae thalli soraliis subterminalibus praeditae, sorediis farinosis vel subgranulosis. Apothecia in marginibus sorediosa. Ceterum ut in var. *subheterochroa*.

Hab. : on mossy rocks and on bark of trees.

Distr. : Japan (Honsyu), Philippines and Java.

Specim. exam. : JAPAN. Honsyu. Prov. Rikutyu : Mt. Sisigahana-dake, Izawa, H. Suzuki 523 (Kurok). Prov. Musasi : Hinata-Ooya, Mt. Ryogami, 1200 m, H. Suzuki (Kurok); Mt. Mitumine, Asahina 13 (Asah) and Kurokawa 50361 (Kurok); Ootigawa-Nisidani, Kurokawa 510220 (Kurok); Siroku, Arakawa-mura, 400 m, Kurokawa 56109-b (Kurok); Nippara, Y. Saito (Asah); Mt. Oodake, Kurokawa 59149 (Kurok). Prov. Sinano : Usui-Pass, E. Uematu 308 (Asah); Mt. Takami-isi, Mts. Yatugatake, 2000 m, Kurokawa 58315 (Kurok); Minotoguti, Mts. Yatugatake, Y. Okada (TNS); Mt. Mikuni, Minami-Saku-gun, Kurokawa 58561 (Kurok). Prov.

Kii: Mt. Koya, 800 m, Kurokawa 56081 (Kurok, Asah, TNS), 56082, 56083, 57288 (Kurok) and Y. Tanaka 386 (Tanak); Yanoko-Pass, Kumano, Kurokawa 59119 (Kurok). Prov. Inaba: Mt. Nakisan, Yoshiatsu Ikoma 3346 (Ikom). PHILIPPINES. Luzon: Baguio, Subprov. Benguet, 2150 m, C.B. Robinson (Bureau of Science, no. 14071), May 1911—holotype of *A. dendritica* var. *propagulifera* (TUR: Herb. Vainio, no. 8003).

The present variety is closely related to *A. sorediifera* (Müll. Arg.) DR. et Lynge and *A. heterochroa* Vain., but differs from the former in containing different yellow pigment and from the latter in producing norstictic and salazinic acids. Soralia of the present variety is, in general, smaller than those of *A. sorediifera* and *A. heterochroa*. On the one hand it is similar to *A. hypocaesia*, from which differs in producing norstictic acid.

var. **dissecta** Kurokawa var. **nov.**

Laciniae thalli in marginibus microphyllino vel subsidioideo dissectae. Apothecia non visa. Ceterum ut in var. *subheterochroa*.

Hab.: on bark of trees.

Distr.: Japan (Honsyu).

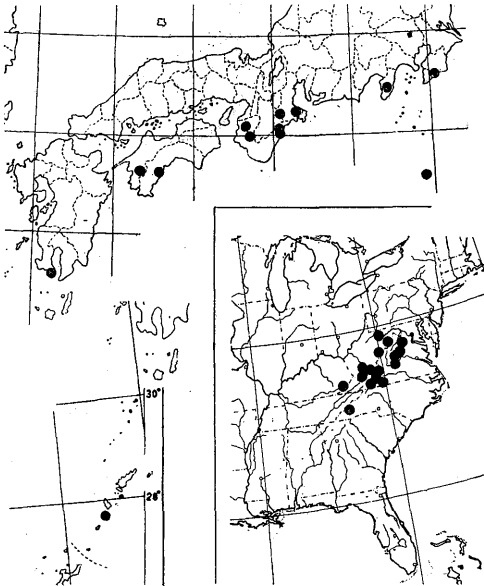


Fig. 11. Distribution of *A. squamulosa* in Japan

Fig. 12. Distribution of *A. squamulosa* in North America

Specim. exam.: JAPAN. Honsyu. Prov. Sagami: Mt. Kamiyama, Hakone, Kurokawa 58052, Apr. 25, 1958 (Kurok). Prov. Kii: Mt. Koya, 800 m, Kurokawa 57286, Nov. 7, 1957—holotype (Kurok) and syntype (Asah).

This new variety is distinguished from var. *subheterochroa* in having microphyllous or subsidial branchlets at the margins of laciniae.

11. **Anaptychia squamulosa** Degel. in Ark. Bot. **30 A** (3): 76 (1941).

“*Anaptychia obscurata* var. *serpens* Vain.’ sensu Räsänen in Journ. Jap. Bot. **16**:

140 (1940).

A. dendritica var. *japonica* f. *microphyllina* Kurokawa in Journ. Jap. Bot. **30**: 255 (1955).

This species is characterized by the presence of numerous squamules at the margins of laciniae and on the thallus. The undersurface of the thallus is white, but in central part it is caesious and at periphery of the caesious part often whitish brown. Dr. G. Degelius did not pay attention to this pigment, which is K—. In Japan this species occurs only in the mountainous region of the Pacific side of Japan Archipelago (Fig. 11), and the distribution range in N. America is restricted within Appalachian Mountains (Fig. 12*). The range of *A. squamulosa* now includes eastern North America and Japan. It clearly shows one of the typical disjunctive distributional patterns between eastern Asia which have been pointed out by Asa Gray and many other botanists.

Hab.: among mosses on rocks and on bark of trees.

Reaction: thallus K+yellow; med. K+yellow, PD±pale yellow.

Chem. ingr.: atranorine, zeorin and often whitish brown substance.

Distr.: Japan (Honsyu, Shikoku, Kyushu, Amami islands) and North America.

Specim. exam.: JAPAN. Honsyu. Prov. Awa.: Mt. Kiyosumi, Kurokawa 56567 (Kurok). Prov. Izu: Amagi-Pass, Kurokawa 58611 (Kurok); Isl. Hachijo, H. Kirihara (Sato: no. 1974). Prov. Ise: Mt. Asama, A. Yasuda 673 (TI); Oosugi.dani, Keta-gun, M. Tagawa 361-a (KYO). Prov. Kii: Mt. Koya, Y. Numaziri 679—holotype of *A. dendritica* var. *japonica* f. *microphylla* (Asah), 649 (Asah), 707 (Asah and TNS); Kurokawa 56086 (US, Kurok), 56084, 56085, 56087, 56088, 57287 (Kurok); Y. Tanaka 396, 402, 1006 (Tanak); Komori.dani, Ryujin-mura, Hidaka-gun, M. Tagawa & K. Iwatsuki 501-a (KYO); Kowa-dani, Owase, Kurokawa 59075 (Kurok); Cape Kuki, Kuki, Kurokawa 59091 59092 (Kurok). Sikoku. Prov. Iyo: Nametoko, Uwazima, 900 m, M. Nakanishi 2106 (Kurok, Nakan). Prov. Tosa: Gozaisyo-no-mori, Hata-gun, I. Yoshimura 90 (Yoshim). Kyushu: Prov. Satsuma: Mt. Kaimon, F. Fujikawa (Asah). Isls. Amami: Mt. Amagi, Isl. Tokunoshima, M. Tagawa & K. Iwatsuki 2637 (KYO, Kurok); Mt. Inokawa-dake, Isl. Tokunoshima, M. Tagawa & K. Iwatsuki 2841 (KYO). NORTH AMERICA. N. Carolina: Mt. Kephart, Great Smoky Mountains, G. Degelius—isoparatype (US).

* The distribution map was kindly supplied by Dr. Mason E. Hale jr., Smithsonian Institution, U.S. National Museum, to whom the author expressed his sincere thanks.

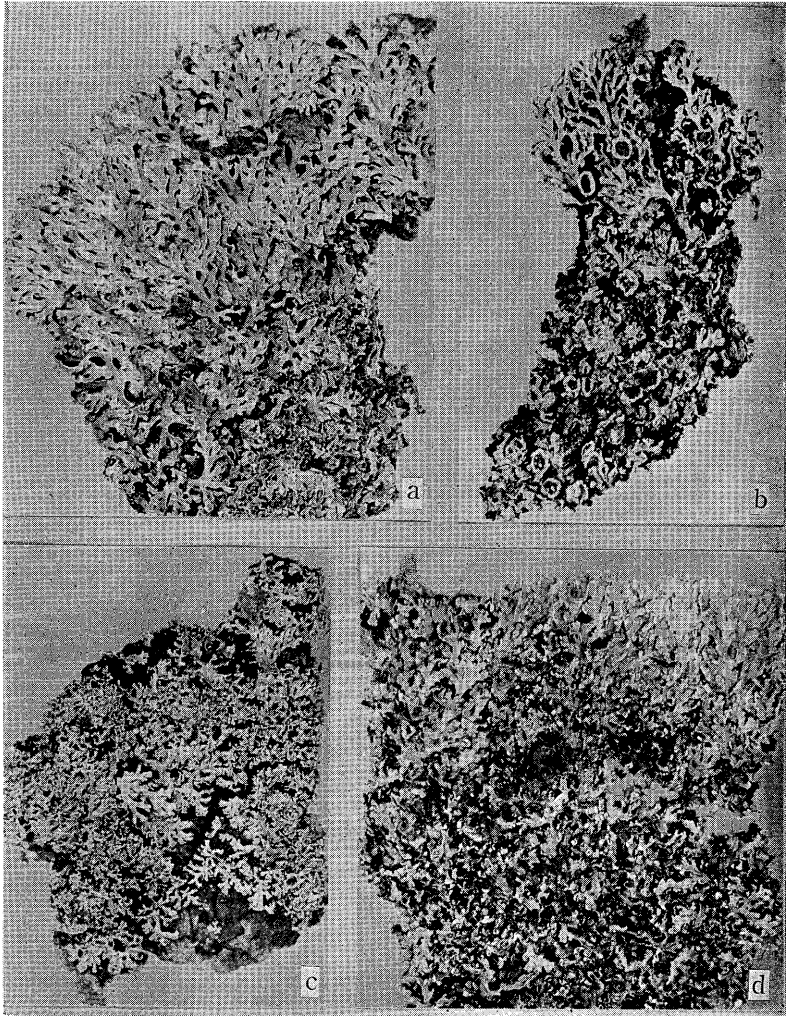


Plate a: Holotype of *A. subheterochroa* ($\times 2/3$). b: Holotype of *A. dendritica* var. *propagulifera* ($\times 2/3$). c: Holotype of *A. subheterochroa* var. *dissecta* ($\times 2/3$). *A. squamulosa* from Japan ($\times 2/3$).

S. KUROKAWA: Anaptychiae