

Syo KUROKAWA\*: **Anaptychia (lichens) and their allies of Japan (6)\*\***

黒川 遼\*: 日本産ゲジゲジゴケ属地衣 (6)\*\*

15. **Anaptychia neoleucomelaena** Kurokawa **sp. nov.**

var. **neoleucomelaena** f. **neoleucomelaena**

'*Anaptychia leucomelaena*' sensu Vain. in Bot. Mag. Tokyo **32**: 156 (1918).

'*Anaptychia leucomelaena* var. *multifida*' sensu Zahlbr. in Fedde Repert. **33**: 68 (1933); Asahina in Journ. Jap. Bot. **10**: 355 (1934); M. Sato in Journ. Jap. Bot. **10**: 688 (1934).

'*Anaptychia leucomelaena* var. *angustifolia*' sensu M. Sato in Journ. Jap. Bot. **12**: 429 (1936) pr. p.; T. Sato in Journ. Jap. Bot. **15**: 243 (1939).

Thallus foliaceus, cinerascens vel albido-glaucescens sed partim saepe sordide fuscescens, substrato laxe adnatus: lacinae elongatae linearesque, usque 10~15 cm longae, dichotome divisae, apices versus subsascentes, 0.2~1.5 mm latae, superne laevigatae, in apicibus angustatae et uncialiter vel subcircinaliter revolutae; subtus decorticae,

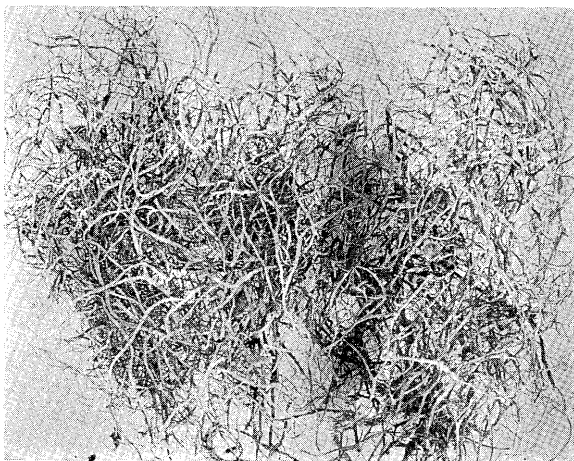


Fig. 14. Holotype of *Anaptychia neoleucomelaena* Kurokawa (×1)

leviter canaliculatae, albiae vel centrum versus obscurae, interdum partim sorediosae, in marginibus fibrillis atris, 5~15 mm longis, simplicibus vel interdum ramosis ornatae. Lacinae crassit. 150~200  $\mu$ ; cortex superior ex hyphis sublongitudinalibus conglutinatis formatus, in sectionibus transversis subirregulariter incrassatus, parte exteriori obscure cinerea 15~20  $\mu$  crassa; stratum gonidiale continuum, gonidiis 8~15  $\mu$  in diam.; stratum medullare tenue et partim subdeficiens.

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Apothecia 1~5 mm in diam., sessilia vel substipitata, prope apices laciniarum enata, demum apicibus laciniarum recurvis, in marginibus lacinulata, lacinulis ad 2 mm longis, intus decorticatis, extus corticatis thallo concoloribusque, margine fibrillis atris brevibus interdum instructis, disco fusco albo-pruinosoque, sed demum saepe subnudo. Apothecia lacanorina; hymenium hyalinum, 160~200  $\mu$  altum, J+coerulescens; epithecium leviter fuscum; hypothecium una cum excipulo proprio ca. 30  $\mu$  crassum; cortex receptaculi subaequaliter incrassatus, J-; asci oblongo-clavati, magnit. 130~150 $\times$ 30~35  $\mu$ , 8-spori; sporae brunnescentes, ellipsodeae, medio levissime constrictae, magnit. 40~54 $\times$ 16~23  $\mu$ , 1-septatae, 2-loculares, loculis rhomboidalibus pyriformibusve, demum cellulis parvis (vel vesiculis) numerosis praeditis.

Reaction: thallus K+yellow; med. K+yellow, C-PD $\pm$ pale yellow.

Chem. ingr.: atranorine, zeorin.

Habit.: among mosses on bark of trees or on rocks.

Distr.: Japan (Hokkaido, Honsyu, Sikoku), Corea, Formosa, Philippines, Burma, India, Fiji, Mexico, Colombia, Peru, Argentine and Africa.

Externally the present new species resembles to *A. ophioglossa*, but it differs from the latter in chemical components. The spores of the present species are somewhat larger than those of the latter. On the one hand the laciniae attenuate towards the apices and are often uncinately or circinate-revolute (see fig. 15).

*A. neoleucomelaena* has been confused with *A. leucomelaena* and it has been often reported as *A. leucomelaena* var. *multifida* or var. *angustifolia* in Japan.

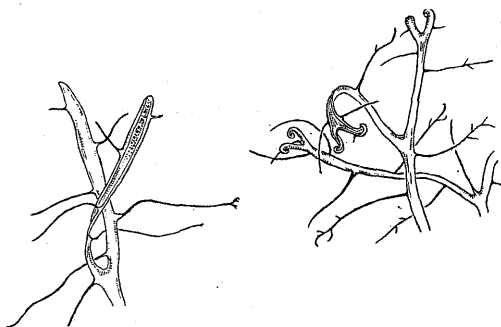


Fig. 15. Laciniae of *A. ophioglossa* (left) and *A. neoleucomelaena* (right).

The distribution of this lichen in Japan, but under other name, has been summarized by Dr. M. Sato (1934), but recent collections cited below extend the range of the species into Hokkaido, while all the Japanese representatives are sterile.

Specim. exam.; JAPAN.

Hokkaido. Prov. Kushiro: Near Kujirahama, Akkeshi, on *Abies sachalinensis*, M. Tatewaki (Asah). Honsyu. Prov. Kozuke: Mt. Myogi, Yasuda 66

(TI). Prov. Musashi: Mt. Ryogami, *Kurokawa* 550589 (Kurok); Mt. Buko, *Asahina* (Asah); Mt. Mitumine, *Kurokawa* 510130 (Kurok); Mt. Izudake, *M. Sato* (TI). Prov. Suruga: Mt. Asidaka, *Asashina* (Asah). Prov. Kii: Mt. Koya, *Y. Numaziri* 604 (TNS, Asah) and *Asahina & M. Togashi* (Asah). Prov. Settu: Dozyo, Arima-gun, *M. Togashi* (Asah). Prov. Aki: Mt. Kammuri, *Y. Ikoma* (Asah); Kusima-mura, Saheki-gun, *T. Sato* 72 (Asah). Sikoku. Prov. Tosa: Mt. Kazigamori, *I. Yoshimura* 895 (Yoshim). COREA. Mt. Kongo, *Asahina* (Asah). FORMOSA. Mt. Taiping shan, *Syoziro Asahina* (Asah). PHILIPPINES. Mindoro: Mt. Halcon, *E. D. Merrill* 6175 (US). BURMA. Upper Burma, *G. Forrest* 27244 (US). INDIA. Almora: Dhaulek range, Askote, 5500 ft., *D. D. Awasthi* 3960 (Awasthi); Dhakuri-Khati, 8000 ft., *D. D. Awasthi* 679 (Awasthi). Below Jamnotri Tehri Gormal, 9000~9500 ft., on tree trunks, June 6, 1951, *D. D. Awasthi* 902—HOLOTYPE (Awasthi). N. of G. B. Hospital in Landor, Mussorie, 6500 ft., *O. A. Höeg* (D. D. Awasthi 3386) (Awasthi). Kodaikanal, 7000 ft., *O. A. Höeg* (D. D. Awasthi 2568, 2569, 2570) (Awasthi). FIJI. Niti Levu: Nandarivata, Mba, 800~900 m, *A. C. Smith* 5966 (BISH). MEXICO. Oaxaca: Trail leading to Cerro San Felipe, Overlooking Oaxaca, on deciduous trees in mature pine-oak mist forest, 3000 m, *Hale* 20687 (TNS). COLOMBIA. No loc., *Wallis* (US). PERU. Lima, *Wawra* 305 (M). ARGENTINE. Puesto de las Lomitas, *R. E. Fries* 62 (UPS). ANGOLA. Carloaongo-Cuvo, Capir, Ambion, Cuanza, 1000 m, *Gossweiler* 10008 pr. maj. p. (US).

f. **sorediosa** (Jatta) Kurokawa **comb. et stat. nov.**

*Farmelia leucomela* var. *sorediosa* Jatta in Ann. di Bot. **6**: 407 (1908)—*Anaptychia leucomelaena* var. *sorediosa* Zahlbr., Cat. Lich. Univ. **7**: 733 (1931); H. des Abbayes in Bull. Soc. Scient. Bretagne **18**: 38 (1941).

Laciniae hic illic sorediosae. Ceterum ut in f. *neoleucomelaena*.

The occurrence of *A. leucomelaena* var. *sorediosa* in Congo has been reported by H. des Abbayes (l. c.). Although the present author has not examined the type, specimens from Japan and India are well identical with the d. Abbayes' specimen.

Specim. exam.: JAPAN. Honsyu. Prov. Sinano: Mt. Akadake, Yatugatake Mts., *Kurokuwa* 520672 (Kurok). INDIA. Darjeeling: Observatory hill, 7000 ft., *D. D. Awasthi* 3761 (Awasthi). Almora: Dhaulek range, Askote, 5500 ft., *D. D. Awasthi* 3313-B (Awasthi). Mussorie, 7000 ft., *D. D. Awasthi* 3796 (Awasthi). CONGO. Volcan Muhavura, Kivu, 3500~4147 m, *H. Humbert* (REN).

var. **sqarrosa** (Vain.) Kurokawa **comb. et stat. nov.**

*Anaptychia leucomelaena* f. *sqarrosa* Vain., Cat. Welw. Afric. Pl. **2**: 408

(1901).

'*Anaptychia leucomelaena* var. *angustifolia* Müll. Arg.' sensu M. Sato in Journ. Jap. Bot. **12**: 429 (1936) pr. p.

The present variety differs from var. *neoleucomelaena* in having squarrosely branched rhizinae. The holotype of *A. leucomelaena* f. *squarrosa* is a fragmentary sterile plant, but the thalli, in general, are well developed and the laciniae often bear subterminal apothecia. The present variety has a very broad pantropical distribution, and appears to be common in Africa and India, but rather rare in tropical America.

Historical and representative specim. exam. : FORMOSA. Summit of Mt. Arisan, M. Sato (TI). CHINA. Yunnan: Vic. of Yunnansen, E. E. Maire 2853 (US). INDIA. No loc., Hook. fil. & Thomson 1720, 1776 (Asah). E. India, J. G. Baker (US). Darjeeling: Tiger Hill, 8000 ft., D. D. Awasthi 3131 (Awasthi); Near Sandalehpoo, 9000~10000 ft., D. D. Awasthi 2509 (Awasthi); Senchal, 7500~8000 ft., D. D. Awasthi 3897 (Awasthi, Kurok). Almora; Tageswar ridge top, 6500 ft., D. D. Awasthi 3497 (Awasthi). Between Silkara & Gangrani, Rari hill top, Tehri Garhwal, 7000 ft., D. D. Awasthi 866 (Awasthi). Kodaikanal, O. A. Höeg (Awasthi 2567) pr. maj. p. (Awasthi). In Mt. Nilagiri, E. Hohenacker (Asah). NEPAL. Rakshe-Ethung, E. Nepal, 7-9000 ft., D. D. Awasthi 2117 (Awasthi). HAWAII. Maui: Haleakala, 600 ft., ex herb. M. Furbringer (M). MEXICO. Veracruz: Deciduous mist forest on mountainside facing Orizaba valley, 36 km. SW. of Orizaba on highway 150, 2380 m, on deciduous trees, Hale 19562 (US). COST RICA. On the road to La Honduras, Vic. of La Palma, 1500-1700 m, W. R. Maxon & A. D. Farvey 7907 (US). FRENCH GUINEA. Mt. Nimba (cercle de N'Zérékoré), 1550 m, H. des Abbayes (REN). ANGOLA. Serra da Xella, Huilla, C. Welwitsch 34--HOLOTYPE of *A. leucomelaena* f. *squarrosa* (TUR: Herb. Vain., 7918). KENIA. Bamboo zone, western slopes of Mt. Kenia, 3000 m, E. A. Mearns 1726, 1775 (US). UGANDA. Mt. Elgon, 13000 ft., R. A. Dummer 3403 (US). TANGANYIKA. C. Gillman, Fl. von Deutsch-Ostaf. 3, 7 (Asah). CONGO. Montagnes a l'ouest du lac Kivu, 2200 m, H. Humbert (REN).

16. ***Anaptychia lutescens* Kurokawa sp. nov.**

'*Anaptychia leucomelaena* var. *mutifida*' sensu Vain. in Étud. Lich. Brés. **1**: 128 (1890); Zahlbr. in Hand.-Mazz., Symb. Sin., III Teil, Lich. 243 (1930).

'*Anaptychia leucomelaena* var. *angustifolia*' sensu M. Sato in Journ. Jap. Bot. **12**: 429 (1936) pr. p.

Thallus foliaceus, cinerascens vel albido-glaucescens, usque 5~10 cm latus: laciniae dichotome divisae, elongatae linearesque, apices versus subsascentes, margine subintegrae sed hic illic lacinulis secundalibus brevibus angustisque interdum ornatae; subtus decorticatae, planae vel leviter canaliculatae, partim lutescentes, prope apices laciniarum interdum sorediosae; rhizinae nigrae, simplices, longit. 4~7mm. Laciniae crassit. 90~130  $\mu$ ; cortex superior irregulariter incrassatus. J—, crassit. 25~90  $\mu$ , parte exteriore anguste cinerea; stratum gonidiale discontinuum, gonidiis 7~13  $\mu$ ,

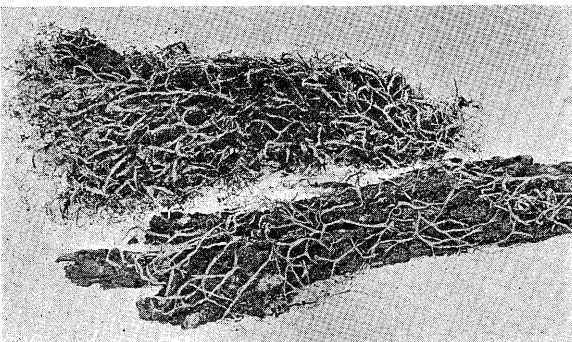


Fig. 16. Holotype of *Anaptychia lutescens* Kurokawa ( $\times 2/3$ ).

in diam.; stratum medullare tenue, partim subdeficiens.

Apothecia rarissima, substipitata, ca. 2 mm in diam., prope apices laciniarum enata, margine lacinulata, disco concavo, brunneo-fusco, albopruinoso. Apothecia lecanorina; epithecium levissime fuscum; hymenium hyalinum, altit. ca. 180  $\mu$ . J+coerulescens; hypothecium a excipulo proprio male limitatum, crassit. ca. 30  $\mu$ , decolor; cortex receptaculi subaequaliter incrassatus. J—; paraphyses filiformes, septatae, in apicibus parum incrassatae et levissime fusciscentes; asci oblongoclavati, magnit. 150~170 $\times$ 30~35  $\mu$ ; sporae brunnescentes, ellipsoideae, medio levissime constrictae, magnit. 36~43 $\times$ 20~21  $\mu$ , 1-septatae, 2-loculares, loculis subglobosis, demum cellulis parvis praeditis.

Reaction: thallus K+yellow; med. K+yellow, C—, PD—; undersurface K+yellow.

Chem. ingr.: atranorine, zeorin and indetermined lemon yellow substance.

Habit.: among mosses on bark of trees.

Distr.: Formosa, China (Yunnan), C. and S. America and Africa.

This new species, which is characterized by lemon yellow undersurface has been confused with *A. leucomelaena* var. *multifida* or var. *angustifolia* in literatures. While the species does not occur in Japan, it is widely distributed in tropical and subtropical regions.

By Asahina's microchemical method the indetermined lemon yellow substance

deposited at the undersurface does not give any crystal. Judging from its color reaction, however, it seems to be a pulvic acid derivative.

Specim. exam.: FORMOSA. Keitau, Dec. 23, 1933, *Y. Asahina* (Asah); Keitau, *M. Sato* 45 pr. maj. p. (TI). CHINA. Yunnan: Locis siccis calide temperatis circa vicum Schilungba prope urbem Yünnanfu, 1950 m, *Hand.-Mazz.* 247 (US). HAWAII. Kauai: W. side, Waimea Drainage, *C. N. Forbes* 1340-K (BISH). MEXICO. Chiapas: Monte Ovando, March 25, 1932, *E. Matuda* 46—HOLOTYPE (Asah) and ISOTYPE (Kurok); Lagos de Monte Bello near the Mexico-Guatemala border, on deciduous trees, 1220 m, *Hale* 20443 (US). Veracruz: 64 km. SW. of junction of highways 140 and 155, NE. of Huatusco, *Hale* 19543 (US). GUATEMALA. Alta Verapaz: Finka Mocca, *H. Johnson* 170-h (US); Chamá, 900 ft., *H. Johnson* 349 (US). COSTA RICA. Guanacaste: Hillside back of farmhouse, Hacienda Santa Maria, 720~850 m, *C. W. Dodge*, *O. Jimenez L.* & *W. S. Thomas* 7040 (M, US). JAMAICA. St. Thomas: Upper southern slopes and summit of Maccasucker Bump, 825~1025 m, *W. R. Maxon* 9545, 9575 (FH). COLOMBIA. Cundinamarca: Western slopes of Páramo de Cruz Verde, 3150 m, *J. Cuatrecasas* 450 (US). Boyacá: Nevado del Cocuy, Chorreón de San Paulino, 3750 m, *J. Cuatrecasas* 1363-B (US); Between Soatá and Cocuy, Paramo del Alto del Cañutal, 3300~3400 m, *J. Cuatrecasas* 1788-J (US). Norte de Santander: Region del Sarare, centre el Alto del Loro y el Alto de Santa Inés, 1800~2200 m, *J. Cuatrecasas*, *Schultes* & *Smith* 12525-G (US). VENEZUELA. Mérida: Páramo de Timotes, 2900 m, *A. Jahn* 779 (US). Oestlich von Los Venados, 1500 m, *P. C. Vogl* 290 (M). PERU. San Martin: Tingo María, 625~1100 m, *H. A. Allard* 20815 (US). Huanuco: Distrito Churubamba, Hacienda Exito, 1165 m, *Y. Mexia* 8241-a (US). BRASIL. Minas Geraes: Sitio, *Vainio*, Lich. Bras. Exs., 695, 1113 (TUR: Herb. Vain. 7908, 7907 respectively); Carassa, *Vainio*, Lich. Bras. Exs., 1162, 1200 (TUR: Herb. Vain. 7906, 7905 respectively); Sao Joao d'el Rey, *Malme* 199 (S). TANGANYIKA. Nchisi Mt., 1400 m, *L. J. Brass* 16920 (US). ANGOLA. Carloaongo-Cuvo, Capir, Amboim, Cuanza Sul, 1000 m, *Gossweiler* 10008 pr. min. p. (US).