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Botanical collectings by the Hungarian Natural History Museum in Korea. A report on the collectings of the 2nd Expedition.

By

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Abstract: An itinerary and list of localities of the botanical collectings of the 2nd expedition in the Democratic People's Republic of Korea in June-July, 1988 are given. Approximately 300 vascular plant and 380 lichen specimens were collected. With 1 figure.

The second Hungarian botanical expedition to the Democratic People's Republic of Korea took place in the summer of 1988, in June and July. Two botanists and two zoologists took part in this four weeks long expedition (MERKL and SZÉL 1989). At the same time this was the 12th zoological expedition. The tour was organized by the Korean Academy of Sciences.

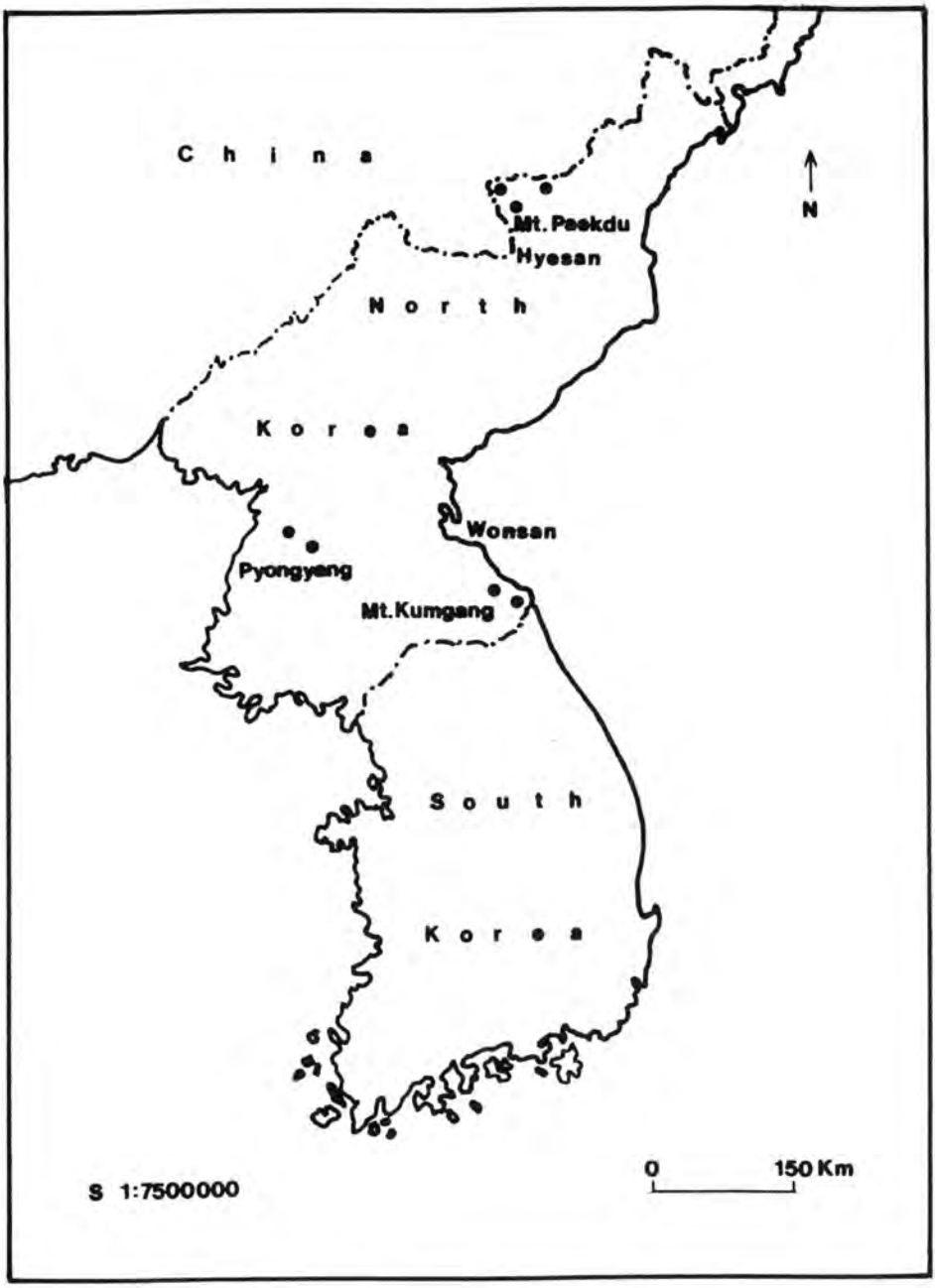
In Pyongyang we visited the Botanical Institute and the Botanical Garden. The director himself guided us in the institute and presented details about its ten departments. Then we visited the nearby botanical garden where in the green houses we saw the amazing Kim Il Sung flower (an orchid) and the *Kimjongilia* flower (a begonia) named after the Great Leader and his son, the Dear Comrade, the two leading politicians of North Korea. The main purpose of the study tour was to collect lichens, ferns and other flowering plants.

The fresh early summer weather was pleasant and suitable for collecting plants and taking photos mainly in the Pyongyang area. In the mountains the climate was colder, and showers frequently made us fresh and interrupted our work. We had difficulties in drying the plant material because of the high humidity.

We spent 12 days on field trips in three main areas, first in Pyongyang and its surroundings, then in the Kumgang Mountains and in the Paekdu Mountains. Approximately 300 vascular plant and 380 lichen specimens were collected.

Four lichen species collected in sufficient amount were issued in Vezda's Lichenes Selecti Exsiccati Fasc. XCI (IX.1988): *Cyphelium lucidum* (Th. Fr.) Th. Fr. (No. 2256), *Dimerella isidiata* Thor et Vezda (No. 2259), *Loxospora cismonica* (Beltram.) Hafellner (No. 2253) and *Ochrolechia szatalaensis* Vers. (No. 2264).

Unfortunately we were allowed to meet DR RI JONG DZAE the only lichenologist of DPRK, at the end of our expedition only. He showed us the lichen herbarium which consists of cca. 10,000 specimens and the first enumeration of the DPRK lichen flora comprising 247 species (RI JONG DZAE 1983). The second checklist was just in press at the time of our visit (318 spp. - RI JONG DZAE 1988). Both lists are poor in crustose species.



Map of Korean peninsula

LIST OF LOCALITIES

Geographical names were used mostly as in VOJNITS and ZOMBORI (1979), meaning of the names was listed by MERKL and SZÉL (1989).

1. Mt. Ryongak-san (15.06.1988)

A small hill cca. 20 km NW of Pyongyang at 200-300 m a.s.l. Covered mostly by *Quercus mongolica* forest.

Lichens: Some rock inhabiting species were collected near the top of the hill from outcrops (*Anaptychia, Aspicilia, Baeomyces, Buellia, Caloplaca, Physcia, Physconia, Ramalina* and *Xanthoparmelia* spp.), and a *Hyperphyscia* sp. from *Quercus.*

Vascular plants: *Pinus densiflora, Quercus* spp., *Smilax* sp.

2. Mt. Taesong-san (16.06.1988)

A small hill cca. 10 km NE of Pyongyang at 200-270 m a.s.l. Covered mostly by *Quercus mongolica* forest.

Lichens: Some *Anaptychia, Cladonia, Lepraria, Porpidia, Ramalina* and *Xanthoparmelia* spp. were collected from rock surface and soil, and *Anaptychia, Bacidia, Buellia, Caloplaca, Lecanactis, Lecanora, Lecidea, Ochrolechia, Pertusaria, Physcia* and *Physconia* spp. from *Quercus* sp.

Vascular plants: *Albizia julibrissin, Crataegus pinnatifida, Galium verum, Ginkgo biloba, Gentiana trifolia, Pinus densiflora, Quercus* spp.

3. Mts. Kumgang-san, near Hotel Kumgang (17, 20, 21, 22.06.1988)

We made several short trips in the hills surrounding the Hotel (50-150 m a.s.l.).

Lichens: On rock surfaces the following species occurred: *Anaptychia, Aspicilia, Caloplaca, Collema, Lecanactis, Lecanora, Ramalina, Stereocaulon* and *Xanthoparmelia* spp. The epiphytic lichen flora was very rich in species (*Anaptychia, Bacidia* and *Buellia* spp., *Caloplaca flavorubescens, Candelaria, Cladonia, Collema, Hyperphyscia, Lecanactis, Lecanora, Lepraria* and *Leptogium* spp., *Loxospora cismonica, Menegazzia pertusa, Normandina pulchella, Ochrolechia* sp., *Parmelia caperata, Parmelia fertilis, Parmelia perlata, Pertusaria, Phaeophyscia* and *Physcia* spp., *Punctelia borreri, Pyxine sorediata, Rinodina, Usnea* and *Xanthoria* spp.), which were collected from *Castanea crenata, Juglans mandschurica, Paulownia coreana, Pinus densiflora, Platanus* sp., *Populus* sp., *Prunus leveileana* and *Robinia* sp.

Vascular plants: *Abies holophylla, A. koreana, A. nephrolepis, Acer mono, A. pseudo-sieboldianum, A. uhurunduense, Castanea crenata, Cornus brachypoda, Cornus controversa, Juglans mandschurica, Larix gmelinii, Paulownia coreana, Pinus densiflora, Platanus* sp., *Populus* sp., *Prunus leveileana* and *Robinia* sp.

4. Mts. Kumgang-san, Samil-po (18.06.1988)

A lake cca. 12 km E of the village Onjong-ri at cca. 50 m a.s.l.

Lichens: Epilithic lichens (*Anaptychia, Caloplaca, Coccocarpia palmicola, Lasallia, Lecanactis, Leptogium, Ochrolechia, Parmelia, Physcia, Pyxine, Ramalina* and *Thyrea* spp.) were collected from rocks around the lake and *Anaptychia,*

Bacidia, Caloplaca, Cladonia, Cetraria, Collema, Hyperphyscia, Lecanora, Lecidea, Opegrapha, Parmelia caperata, Parmelia, Pertusaria, Phaeophyscia, Physcia, Punctelia and *Pyxine* spp. from the bark of *Kalopanax picta, Pinus densiflora* and *Rhus javanica.*

Vascular plants: *Pinus* spp., *Corylus* sp., *Equisetum arvense, Kalopanax picta, Lilium concolor, Lilium distichum, Myosotis laxa, Onoclea sensibilis, Osmunda javanica, Pinus densiflora, Pteridium aquilinum, Rhus javanica, Sasamorpha* sp., *Selaginella* sp., *Thalictrum coreanum.*

5. Mts. Kumgang-san, Kuryongyon falls (19.06.1988)

Along the path between Restaurant Mokran and Kuryongyon falls (Kuryong Pavilion) at 500-600 m a.s.l.

Lichens: The wet, mossy rocks were covered by the following lichens *Anaptychia* and *Aspicilia* spp., *Coccocarpia palmicola, Collema, Lasallia, Lecanora, Leptogium, Lichinella, Lobaria, Pannaria, Pertusaria, Peltigera, Peltula* and *Porpidia* spp. On the bark of *Carpinus* sp., *Fraxinus* sp. and *Quercus* sp. the following species occur: *Anaptychia, Bacidia, Caloplaca, Coccocarpia, Graphis, Lecanora, Leptogium, Normandina pulchella, Ochrolechia, Pachyphiale, Parmelia, Phlyctis, Physcia* and *Pyxine* spp.

Vascular plants: *Abies holophylla, Abies koreana, Abies nephrolepis, Amethystanthus excisus, Carpinus erosa, Carpinus laxiflora, Castanea crenata, Fraxinus* sp., *Hemerocallis disticha, Hepatica asiatica, Ixeris dentata, Juniperus utilis, Majanthemum bifolium, Quercus acutissima, Quercus dentata, Quercus mongolica, Quercus variabilis, Tilia amurensis.*

6. Mts. Kumgang-san, Manmul-san (20, 21.06.1988)

On the visitors' path from Mansang Pavilion and Three Brothers Rock to the Chonsondae Rock (at cca 1000 m a.s.l.) we collected epilithic lichens (*Anaptychia, Lasallia, Parmelia, Pertusaria, Porpidia, Ramalina* and *Stereocaulon* spp.), as well as epiphytic species (*Anaptychia, Caloplaca, Coccocarpia erythroxyli, Graphis, Lecanactis, Lecanora, Leptogium, Ochrolechia, Parmelia, Pertusaria, Phaeophyscia* and *Pyxine* spp.), the latter ones from *Acer mono, Carpinus* sp., *Cornus brachypoda, Fraxinus* sp., *Quercus acutissimus* and *Quercus variabilis.*

7. Mts. Kumgang-san, near Onjong-ri village (22.06.1988)

Lichens: Some epiphytic lichen species (*Menegazzia, Parmelia, Physcia, Platismatia* and *Xanthoria* spp.) were collected from *Ailanthus* sp., *Pinus densiflora* and *Robinia* sp. at 100-200 m a.s.l.

Vascular plants: *Ailanthus altissima, Pinus densiflora, Robinia psedo-acacia, Rosa rugosa.*

8. Mts. Paekdu-san, near Hotel Samjiyon (26-27.06.1988)

We made several local trips in the hills surrounding the Hotel at cca. 1500 m a.s.l.

Lichens: On rocky outcrops and soil we found the following lichens: *Anaptychia* sp., *Cetraria ericetorum, Cladonia coccifera, Cladonia digitata, Cladonia gracilis,*

Cladonia mitis, Cladonia rangiferina, Diploschistes, Heterodermia, Lobaria, Pannaria, Peltigera and *Physconia* spp., *Pyxine sorediata* and *Stereocaulon* sp.

On the bark of *Betula platyphylla, Larix gmelinii* and *Picea jezoensis* the following species occurred: *Anaptychia, Bryoria* and *Caloplaca* spp., *Cetraria pinastri, Cyphelium lucidum, Evernia, Graphis, Heterodermia, Hypocenomyce, Hypogymnia, Icmadophila* (decaying wood), *Lecanora, Lecidea, Leptogium, Lobaria* and *Loxospora* spp., *Nephroma bellum, Ochrolechia szatalaensis, Parmelia caperata, Parmelia, Pertusaria, Phaeophyscia* and *Physcia* spp., *Pseudocyphellaria aurata, Ramalina, Rinodina* and *Sticta* spp., *Usnea longissima* and *Usnea* sp.

Vascular plants: *Betula* spp., *Calypso bulbosa, Clintonia udensis, Convallaria keiskei, Drosera rotundifolia, Fragaria orientalis, Iris dichotoma, Iris uniflora, Larix gmelinii, Paris verticillata, Petasites saxatilis, Picea jezoensis, Pinus* spp., *Prunella vulgaris, Ranunculus acris, Trientalis europaea, Trollius japonicus, Vaccinium vitis-idaea.*

9. Mts. Paekdu-san, Paekdusan-Milyong (27.06.1988) cca. 1500 m a.s.l.

Lichens: *Anaptychia, Caloplaca, Dimerella isidiata, Icmadophila, Lepraria, Peltigera, Physcia, Physconia* and *Xanthoria* spp. were collected from rock and soil. Epiphytic species (*Anaptychia, Bacidia, Cetraria pinastri, Graphis, Lecanora, Leptogium* and *Lobaria* spp., *Menegazzia terebrata, Parmelia squarrosa, Peltigera* and *Pertusaria* spp., *Pseudocyphellaria aurata*) were collected from *Betula platyphylla, Larix gmelinii* and *Picea jezoensis.*

Vascular plants: *Betula platyphylla, Cypripedium thunbergii, Larix gmelinii, Picea jezoensis, Viola biflora.*

10. Mts. Paekdu-san, Mt. Paekdu (28.06.1988) 2000-2750 m s.m.

Lichens: Rock surfaces and soil were covered by a large number of lichen species, e.g. *Arthrorhaphis citrina, Bacidia* sp., *Baeomyces roseus, Bryoria* sp., *Caloplaca cinnamomea, Candelariella* and *Cetraria* spp., *Cladonia amaurocraea, Cladonia stellaris, Cladonia uncialis, Dimelaena oreina, Hypogymnia* sp., *Lepidoma demissum, Ochrolechia upsaliensis, Pertusaria bryontha, Pertusaria glomerata, Rhizocarpon* spp., *Rhizoplaca peltata, Stereocaulon, Thamnolia, Umbilicaria* and *Usnea* spp. On lower parts of the mountain, covered by *Larix gmelinii* forest with *Erica* and *Rhododendron* sp. shrubs in it, *Bryoria, Parmelia* and *Usnea* spp. were collected.

Vascular plants: *Aquilegia japonica, Aquilegia oxysepala, Astragalus dauricus, Dryas octopetala* var. *asiatica, Papaver coreanum, Phyllodoce coerulea, Rhododendron aureum, R. mucronulatum, R. parviflorum, R. yedoense.*

11. Mts. Paekdu-san, Taehongdan (29.06.1988)

Lichens: *Peltigera didactyla* were found on soil and *Hypogymnia, Lecanora* and *Leptogium* spp., *Parmelia olivacea, Parmelia squarrosa* and *Pseudocyphellaria aurata* on bark of *Betula platyphylla* and *Larix gmelinii.*

Vascular plants: *Betula platyphylla, Iris pallasii, Larix gmelinii, Pyrola incarnata.*

12. Mts. Paekdu-san, Mupo (29.06.1988) cca. 1000 m a.s.l.

Lichens: *Cladonia* spp., *Leptogium* and *Peltigera* spp. were collected from soil and *Caloplaca cerina, Evernia* and *Graphis* spp. from *Betula platyphylla.*

Vascular plants: *Betula platyphylla, Cypripedium guttatus.*

13. Mts. Paekdu-san, Samji lake (29.06.1988) cca. 1500 m a.s.l.

Lichens: *Cyphelium lucidum, Graphis, Lecanora* and *Ochrolechia* spp. were collected from *Larix gmelinii* and *Prunus* sp.

Vascular plants: *Betula cyclophylla, B. ermani, Larix gmelinii, Prunus* sp., *Salix rotundifolia, S. sericeo-cinerea.*

14. Mts. Paekdu-san, Chongbong (30.06.1988) cca. 900 m a.s.l.

A *Xanthoparmelia* species was collected from rocks, and some interesting epiphytic species from *Abies* sp., *Acer* sp., *Betula ermani, Picea jezoensis* and *Populus tremula (Arthonia, Bacidia, Chaenothecopsis, Collema, Graphis, Lecanora, Leptogium, Ochrolechia, Pannaria, Pertusaria, Ramalina, Rinodina* and *Sticta* spp.).

15. Mts. Paekdu-san, Gonchang (30.06.1988) cca. 800 m a.s.l.

Some lichens were collected from rock and soil (*Parmelia* and *Peltigera* spp., *Pseudocyphellaria aurata* and *Rinodina* sp.).

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