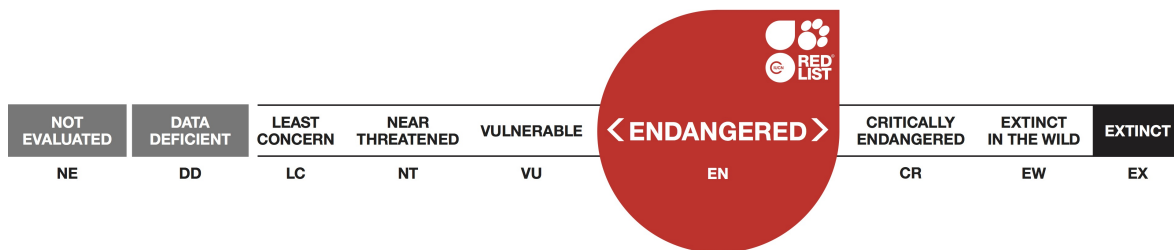


Sticta alpinotropica

Assessment by: Thor, G. & Aptroot, A.



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Citation: Thor, G. & Aptroot, A. 2017. *Sticta alpinotropica*. The IUCN Red List of Threatened Species 2017: e.T71670425A71670636. <http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T71670425A71670636.en>

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Fungi	Ascomycota	Lecanoromycetes	Peltigerales	Lobariaceae

Taxon Name: *Sticta alpinotropica* Aptroot

Identification Information:

This is a very characteristic umbilicate stiped lichen that belongs to the genus *Sticta* but replaces the genus *Umbilicaria*. which is not known from all of New Guinea, on this mountain. Upper surface dark chocolate to blackish brown, glossy; often, but not on every lobe, with shallow reticulations and foveae. Lower surface black, mostly covered with a short felty layer of rhizinae, always with cyphellae. Rhizines 50–150 µm long, simple or usually dichotomously branched, consisting of one row of isodiametrical, thick-walled cells, which are c. 10 µm diam., brown below, and tapering to c. 5 µm diam., hyaline for the upper 2–4 cells, which are markedly rounded and catenulate. Cyphellae ochraceous inside, 0.2–0.4 mm deep, 0.2–0.8 mm wide, margin slightly raised (thelotrematoid), glossy dark brown to black, 0.1 mm wide. Cortex identical on upper and lower surface, isidia and apothecium margin, paraplectenchymatous, cell walls thickened, dark brown, 5–10 µm diam. Medulla ochraceous, unchanged in KOH. Photobiont nostocoid, cells in clusters, c. 4–7 µm diam., often compressed sideways. Lobes irregularly branched, concave or somewhat saddle-like contorted, flat, mostly 0.7–2.4 mm wide, 0.1–0.3 mm thick. Lobe margins much incised, always with pockets of isidia projecting upwards and sideways. Isidia simple to branched, knobbly to finger-like, often bent, glossy chocolate brown, 0.1–0.2 mm wide, up to 1.0 mm long, becoming detached leaving ochraceous scars. Soredia absent. Cilia absent. Apothecia occasionally present, sessile on a small stipe at the tips of lobes, 0.5–5.0 mm wide, 0.3–1.7 mm high. Disc concave, shiny, chocolate brown. Apothecium margin rough, dull, dark brown, c. 0.2–0.4 mm thick. Excipulum hyaline inside, brown in a small cortical zone, consisting of radially arranged, thickened cells 5–8 x 7–12 µm. Epihymenium fuscous brown, c. 50 µm high. Hymenium hyaline, not inspersed. Hypothecium ochraceous, c. 50 µm high. Paraphyses simple, hyaline, c. 2 µm wide, tip clavate, formed by 2–4 cells, tapering gradually up to 4 µm wide, fuscous brown, with a truncate tip. Ascospores 4/ascus, fusiform with lower end tapering into a tail, hyaline, 3-septate, 40–55 x 7–10 µm. Pycnidia occasionally present, hemispherical, concolorous with thallus, 0.1–0.2 mm diam. Conidia not observed. Chemistry. No lichen substances detected, but with strong fishy smell.

Assessment Information

Red List Category & Criteria: Endangered D [ver 3.1](#)

Year Published: 2017

Date Assessed: August 30, 2017

Justification:

This species grows only in the summit area of a very high isolated mountain in the tropics. If the area would become subject to global warming, its natural niche (an oro-alpine situation) would vanish and

the species would have no place to retreat to, and will be soon replaced by species that are adapted to milder climate in the unlikely case that it manages to adapt to a milder climate.

Criterion A does not apply.

Criterion B does not apply.

Criterion C does not apply.

Criterion D: Estimated population size according to the area occupied area is less than 250 individuals. So it can be assessed as Endangered under criterion D.

Geographic Range

Range Description:

Confined to the summit area of Mount Wilhelm, an isolated high mountain almost on the equator in Papua New Guinea. Grows at an altitude of ca. 4,200-4,300 m.

Country Occurrence:

Native: Papua New Guinea (Papua New Guinea (main island group))

Population

It occurs in loose and dispersed stands, the total area of occupied by this species of the population is less than a few dozen square meters. The population is small and comprises fewer than 250 mature thalli.

Current Population Trend: Unknown

Habitat and Ecology (see Appendix for additional information)

Grows on bare rock, an unusual substrate for this genus. The species here fills the empty niche of the family Umbilicariaceae, which is absent from the region.

Systems: Terrestrial

Threats (see Appendix for additional information)

This species grows only in the summit area of a very high isolated mountain in the tropics. If the area would become subject to global warming, its natural niche (an oro-alpine situation) would vanish and the species would have no place to retreat to, and will be soon replaced by species that are adapted to milder climate in the unlikely case that it manages to adapt to a milder climate.

Conservation Actions (see Appendix for additional information)

Reduce man's impact on the climate that leads to global warming.

Credits

Assessor(s): Thor, G. & Aptroot, A.

Reviewer(s): Scheidegger, C.

Contributor(s): Weerakoon, G. & Perez-Ortega, S, Dahlberg, A.

Bibliography

Aptroot, A. 2008. *Sticta alpinotropica*, a new saxicolous lichen species from the alpine zone of Mt Wilhelm, Papua New Guinea. *Lichenologist* 40: 419-442.

IUCN. 2017. The IUCN Red List of Threatened Species. Version 2017-3. Available at: www.iucnredlist.org. (Accessed: 7 December 2017).

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External Resources

For [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
0. Root -> 6. Rocky areas (eg. inland cliffs, mountain peaks)	-	Suitable	-

Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: No
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over part of range
Occur in at least one PA: No

Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection

Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Research Needed
2. Conservation Planning -> 2.2. Area-based Management Plan

Research Needed
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Number of Locations: 1
Lower elevation limit (m): 4200
Upper elevation limit (m): 4300
Population
Number of mature individuals: 100-249
No. of subpopulations: 1
All individuals in one subpopulation: Yes

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