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# *Lophozia lantratovae* Bakalin new to northern Europe

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*Lophozia lantratovae* is reported for the first time from Europe outside northern Caucasus. It is found in several places in central Norway, in wet places in pre- to subalpine areas.

Keywords: *Lophozia*, new record, Norway

*Lophozia lantratovae* Bakalin was described by Bakalin (2003) from Yakutia in Siberia and later shown to be widespread in Siberia and Russian Far East and also reported from China (Jilin, Sichuan, Yunnan) and Korea (Choi et al. 2021). It is also shown to be fairly common in Caucasus, reported both from Georgia (Bakalin and Tigishvili 2013) and on the northern, European, side in Russian Karachevo-Cherkess (Konstantinova and Savchenko 2008) and North Ossetia (Konstantinova et al. 2021; Fig. 4). It is thus expected to occur in more places in Europe. In the original description of the species the name was spelled as *Lophozia 'lantratoviae'* but as it is named after a female (A. S. Lantratova) the spelling must be corrected to *Lophozia lantratovae* (cf. ICN Art. 60.8, Turland et al. 2018; A. Haggborg, pers. comm.).

On a field excursion to Trollheimen in central Norway, specimens that seemed to be *Lophozia longidens* (Lindb.) Konstant. et Vilnet were found growing in an uncommon habitat, epiphytic among other bryophytes on mountain birches in mire landscapes at altitudes of 700–900 m a.s.l. Under microscope it was seen that those specimens had biconcentric oil bodies, a character not known in *Lophozia longidens*. The only known *Lophozia*-like taxon with red to brown gemmae that should have biconcentric oil bodies is *Lophozia lantratovae* which thus was confirmed as new to Norway and the whole Europe outside the northern slope of Caucasus.

Molecular studies places *Lophozia lantratovae* in a clade with *Lophozia ascendens* (Warnst.) R.M. Schust. and the recently

described *Lophozia svalbardensis* Konstant., Vilnet et Mamontov (Bakalin and Vilnet 2019, Konstantinova et al. 2020).

## Description

A full description of the species is found in Bakalin (2003). *Lophozia lantratovae* is characterized by reddish-brown to brownish gemmae (colorless when immature; Fig. 1) and leaf cells with a high proportion of biconcentric oil bodies (Fig. 2). It may be confused with *Lophozia longidens* but mature gemmae of the latter are bright gemmae (when fresh) and the leaves are rectangular. The upper leaves of *Lophozia lantratovae* are often also rectangular but become more ovate further down the shoot (Fig. 3).

*Lophozia lantratovae* can also resemble *Barbilophozia sudetica* (Nees ex Huebener) L.Söderstr., De Roo et Hedd. in coloration of gemmae but differs in oil bodies and the absence of the rusty-brown shoots characteristic of the latter. *Barbilophozia sudetica* has also frequently small to moderately sized underleaves, which are totally lacking in *Lophozia lantratovae*.

In old herbarium material of *Lophozia longidens* the gemmae also often turn brownish and can be difficult to separate from *Lophozia lantratovae*. However, after re-wetting samples, the gemmae of the two taxa often regain their coloration. Additional characters to separate them are the rectangular leaves in *Lophozia longidens* while the leaves in *Lophozia lantratovae* (at least a bit down the shoot), is more ovate. Perianth mouth in *Lophozia longidens* is also ciliate while it is dentate in *Lophozia lantratovae*.

## Occurrence in Norway

In Norway, *Lophozia lantratovae* is found in boreal mixed forests at mid-altitude, epiphytic in cushions on mainly

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Figure 1. *Lophozia lantratovae* growing on a boulder in mixed mountain birch forest.

birches in moist to wet areas, often together with species like *Lophozia silvicola* H.Buch, *Ptilidium pulcherrimum* (Weber) Vain. and *Dicranum montanum* Hedw. We have seen material from 310 to 730 m a.s.l.

The species is confirmed from Møre og Romsdal and Sør-Trøndelag provinces although examination of older herbarium material and further field studies certainly will expand its distribution area. Examined material where biconcentric oil bodies are found as follows (Fig. 4).

Norway, Møre og Romsdal, Rindal, Fossdalen, E of Trøsetra, S of Tuva, 430 m a.s.l. (63°09'44"N, 9°16'19"E), base of large *Betula pubescens*, partly dead, in moist forest dominated by small ferns, 2020.07.28 T. Prestø, det. L. Söderström (TRH B-112694).

Norway, Sør-Trøndelag, Storlidalen, Ångardslia, W of Sandåa, 600 m a.s.l. (62°39'52"N, 9°10'50"E), on stem of large, standing, dead *Betula pubescens* in moist tall-herb forest, 2020.08.07 T. Prestø, det. L. Söderström (TRH B-112693).

Norway, Sør-Trøndelag, Oppdal, Storlidalen, Sandøyvegen, 601 m a.s.l. (62°39'41"N, 9°12'27"E), base of *Betula pubescens*, 2020.07.21 L. Söderström, det. L. Söderström (herb. LS).

Norway, Sør-Trøndelag, Oppdal, E of Gravbekken, 730 m a.s.l. (62°42'30"N, 9°22'58"E), base of *Betula pubescens* log, 2020.08.06 K. Hassel, det. K. Hassel (TRH B-112600).

Norway, Sør-Trøndelag, Trondheim, Kongslin Nature Reserve, 310 m a.s.l. (63°16'45"N, 10°36'13"E), on stand-

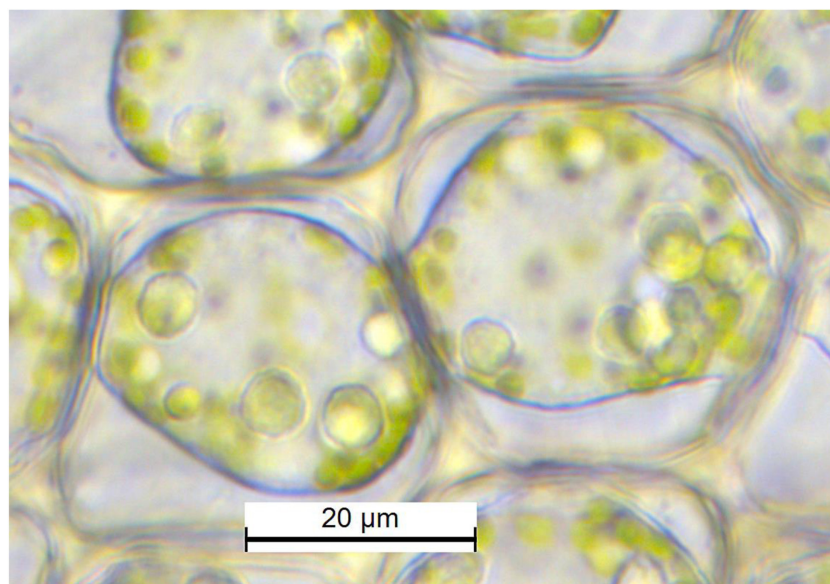


Figure 2. Oil bodies of *Lophozia lantratovae* (TRH B-112600).

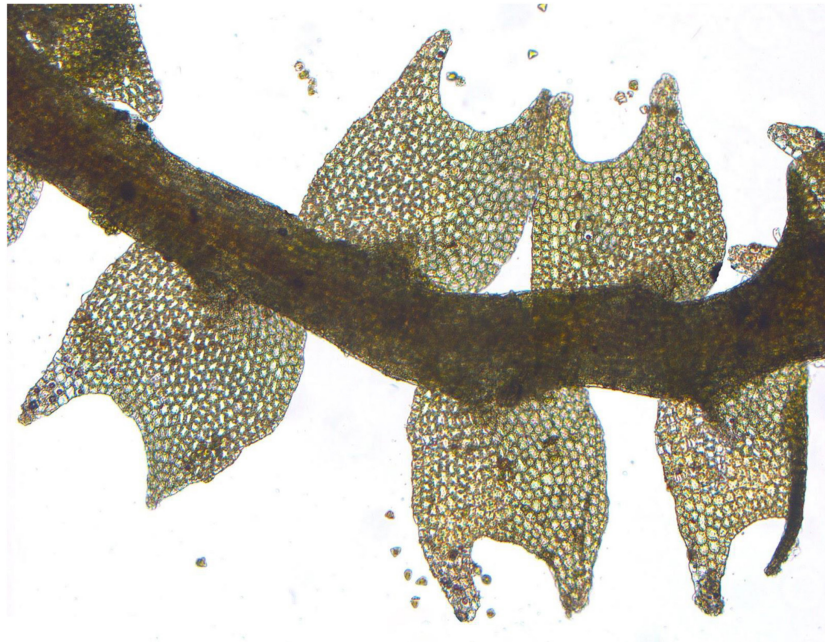


Figure 3. *Lophozia lantratovae* shoot with leaves below shoot apex (TRH B-112600).



Figure 4. Confirmed distribution of *Lophozia lantratovae* globally and in central Norway (inset map).

ing, dead *Betula pubescens*, 35 cm dbh in *Picea abies*-dominated *Vaccinium myrtillus* forest., 2021.08.21 T. Prestø, det. T. Prestø (TRH B-116253).

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