

NOTES ON DUTCH LICHENS—II

by

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(Rijksherbarium, Leiden)

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ACAROSPORA Mass.

A. *pelicypha* (Wahlbg.) Th. Fr.

Thallus squamulose, yellow-brown to fulvous, not pruinose, underside black. Cortex paraplectenchymatous covered with necral layer, colourless below, brownish above, 27—34 μ , lumina 6—8 \times 4—6 μ , brownish zone C + reddish. Apothecia one to several per squamule, congested, with somewhat elevated margin, and red-brown disc becoming rugulose with age, up to 1.3 mm. diam. Hymenium colourless, brown towards epithecium, J + blue, turning red-brown, 83—90 μ . Asci clavate, more than 100-spored, 67—70 \times 16—18 μ . Spores 1-celled, cylindrical-ellipsoid, 4.5—5.8 \times 0.8—2.5 μ . Paraphyses septate, sparingly branched, 1—2 μ , apices clavate, 4—5 μ .

There seems to be some uncertainty as to the citation of the second author. Arnold (1884: 316) on transferring Wahlenberg's *Parmelia pelicypha* to the genus *Acarospora*, retained the original spelling of the specific epithet, whereas Fries (1861: 189) had changed the latter into '*peliscypha*'. However, since both recombinations are based on the same type, '*pelicypha*' and '*peliscypha*' should be regarded as orthographic variants. Fries's transfer is of an earlier date than Arnold's, but instead of the spelling as used by Fries, the original one should be adhered to (Art. 73).

New to the flora.

Drente: Bronneger, 6 May 1941, *Maas G. 986a*; Drouwen, 6 May 1941, *Maas G. 941, 942*; Emmerveld, 8 May 1941, *Maas G. 1078*; in all cases on granitic boulders of cairns frequently used as a perch by birds (L).

CALOPLACA Th. Fr.

Sect. *Eucaloplaca* Th. Fr.

C. *variabilis* (Pers.) Müll. Arg.

Hypothallus dark bluish grey. Thallus crustaceous, verruculose, areolate and grey-brown in centre, extenuate to somewhat effigurate and pale grey at margin. Apothecia immersed to adnate, with white-pruinose margin, up to 1 mm. diam. Disc black-brown to black, naked or pruinose. Epithecium C—, K + pale purplish brown to pale violet. Hymenium colourless below, greenish to olive brown above, J + dark blue, 60—110 μ ,

Asci clavate to fusiform, 8-spored, $50-75 \times 17-21 \mu$. Spores obliquely 2-seriate or irregularly disposed, polarilocular, ellipsoid-fusiform, colourless, $13.0-17.9 \times 6.3-9.0 \mu$, septum $2.7-4.9 \mu$. Paraphyses easily separable, septate, simple or sparingly furcate, sometimes anastomosing, $1.5-3 \mu$, apical cell clavate-capitate, $4-6 \mu$.

Our material differs from the description as given by Magnusson (1950: 380) in that (1) the hymenium, especially in the specimen from Katwijk, is much higher, (2) the septum of the spores thicker. I believe, however, that these characters, too, are subject to a certain variability. In a Swedish specimen (Vestergötland, Kinnekulle, 30 July 1917, *C. Stenholm*) I found the hymenium 120μ high, in Hepp, *Flechten Europa's* 74, 110μ high. In the latter the septum of the spores was found to measure $4.5-4.6 \mu$, in Claudel & Harmand, *Lich. gall. praecip.* exs. 529, 3.6μ . This condition stresses, yet more than expressed by Magnusson, the close relationship of *C. chalybaea*, *diphyodes*, and *variabilis*.

The present species was already found in the past by Van der Sande Lacoste who misidentified it as *Parmelia (Urceolaria) glaucopsis* Schaer. This name was listed in the first edition of the 'Prodromus' (Van den Bosch, 1853: 139), but deleted from the second (Abeleven).

Noord-Holland: Amsterdam, no date, *C. M. van der Sande Lacoste*, on slate of wall (L).

Zuid-Holland: Katwijk aan Zee, 1 June 1942, *Maas G. 862b*, on basalt of dike along mouth of river Oude Rijn (L).

Sect. *Gasparrinia* (Torn.) Th. Fr.

Of the present section few representatives only are known to occur in the Netherlands. Two of these, *Amphiloma callopismum* and *A. murorum*, were enumerated by Abeleven (1898: 26). The former was correctly identified, i.e. *Caloplaca aurantia* (Pers.) Hellb., but most of the collections under the latter name are referable to *C. aurantia* as well which in this country is much more common than *C. murorum* (Hoffm.) Th. Fr.

As to the distribution of *C. aurantia* — and in this connection I may refer to the statement made by Poelt (1954: 22) —, it is of interest to note that, whereas var. *heppiana* (Müll. Arg.) Poelt and intermediate forms are by far in the majority, having been collected in all parts of the country, var. *aurantia* is rare and, as yet, only known from near the sea:

Gelderland: Hoef, 25 Oct. 1941, *Maas G. 1650c*, on basalt of dike along IJsselmeer (former Zuyder Sea, closed in 1937). (L).

Zuid-Holland: Katwijk aan Zee, 1 June 1941, *Maas G. 812*, 1 May 1948, *Maas G. 4060*, on basalt of dike along mouth of river Oude Rijn, near sea-shore (L); the same, Aug. 1941, *F. A. Staflew* (U).

C. decipiens (Arn.) Jatta

f. *decipiens*

Thallus lobes narrow, convex, fanning out and flattened at circumference, ochraceous to orange, sometimes whitish in centre, thickly pruinose to scabrous, sorediose in centre. Soralia labriform to capitiform. Apothecia uncommon, sessile, marginate, with orange

disc, up to 1 mm. diam. Asci clavate, 8-spored, $50-75 \times 12-16 \mu$. Spores obliquely 2-seriate, polarilocular, ellipsoid, colourless, $13.0-16.1 \times 6.3-7.2 \mu$, septum $4.2-4.5 \mu$. Paraphyses septate, moderately branched, 2μ , apical cells clavate, encrusted with orange crystals, $4-6 \mu$.

The type form was also collected in former times, but either not noticed as an admixture to other species, or misidentified.

Drente: Eext, 3 May 1941, *Maas G. 742*, on concrete of roof (L).

Utrecht: Houten, 21 Febr. 1942, *F. A. Stafleu*, on concrete of fortification, transitional stage to *f. compacta* (U); Utrecht, 't Hemeltje, 26 April 1954, *Maas G. 9633, 9636*, on concrete of fortification (L); Utrecht, Lunette II, 20 Febr. 1942, *F. A. Stafleu & E. T. Nannenga*, on concrete of fortification (U).

Noord-Holland: Amsterdam, Jan. 1849, *C. M. van der Sande Lacoste*, on wall along canal (L); Amsterdam, Amsteldijk, March 1849, *C. M. van der Sande Lacoste*, on *Ulmus* (NBV); Amsterdam, Funen, Dec. 1840, *C. M. van der Sande Lacoste*, on wall (NBV).

Zuid-Holland: Katwijk aan Zee, 23 Dec. 1832, *J. Wittewaal*, on cement of lighthouse (NBV); 1 June 1941, *Maas G. 814*, 1 June 1942, *Maas G. 862a*, on basalt of the dike along mouth of river Oude Rijn, c. apoth. (L); Koudekerk aan de Rijn, Lage Waard, 19 April 1943, *Maas G. 2434, 2435*, on brick of bridge, No. *2435* c. apoth. (L).

Zeeland: Zuid-Beveland, Hansweert, 28 June 1951; Schore, 27 June 1951, *B. J. J. E. Walrecht*, on wall of dike (L).

Limburg: Sambeek, 8 March 1941, *Maas G. 515*, on brick of wall, c. apoth. (L).

f. compacta (Malbr.) Zahlbr.

Differing from the type form in that the centre of the thallus is verrucose-bullate, whereas part of the crowded warts is distintegrated into soredia.

New to the flora.

Utrecht: Utrecht, 't Hemeltje, 26 April 1954, *Maas G. 9637*, on concrete of fortification (L).

Zuid-Holland: Koudekerk aan de Rijn, Lage Waard, 13 Sept. 1953, *Maas G. 9471*, on cement of wall (L).

Zeeland: Zeeuws-Vlaanderen, Ossensisse, Zeedorp, 4 July 1958, *Maas G. 12543*, on concrete wall of dike (L).

C. marina Wedd.

Thallus hardly with radiating lobes, usually thinning out at circumference, more rarely somewhat effigurate, areolate to bullate-areolate in centre, yellow to orange. Apothecia sessile, marginate, with deep orange disc, up to 1 mm. diam. Asci clavate, 8-spored, $45-61 \times 14-18 \mu$. Spores 2-seriate, polarilocular, ellipsoid-fusiform, colourless, $12.5-15.2 \times 5.8-7.2 \mu$, septum $4.9-5.4 \mu$. Paraphyses septate, sparingly branched, $1.8-3.6 \mu$, apical part consisting of swollen cells, $5.4-7.2 \mu$ broad, enveloped in mucous sheath encrusted with orange crystals.

New to the flora.

Friesland: between Harlingen and Roptazijl, 25 Aug. 1942, *Maas G. 2168*, on granite and basalt of dike (L); Terschelling, Dellewal, 3 Sept. 1954, *C. den Hartog*, on basalt of dike (L); Terschelling, West Terschelling, 1 Sept. 1954, *C. den Hartog*, on basalt of dike (L).

CANDELARIELLA Müll. Arg.**C. medians** (Nyl.) A. L. Sm.

Thallus lobate and chrome yellow at circumference, rimose further inward, areolate, verrucose-granular and grey in centre, lobes scabrous, K — or, more rarely, + purplish. Apothecia rare, sessile, marginate, with olivaceous disc, up to 0.7 mm. diam. Hymenium 60—80 μ . Asci clavate, 8-spored, J + blue, 51—60 \times 14—16 μ . Spores irregularly 2-seriate, 1-celled (although the contents may make the spores seem 2-celled), ellipsoid, straight to somewhat curved, colourless, 12.5—13.9 \times 5.4—6.3 μ . Paraphyses easily separable, septate, sometimes constricted at the septa, sparingly branched, 2—3 μ , apices somewhat clavate, encrusted with dark orange crystals, 4 μ .

The specimens collected more than a century ago have all been mistaken for *Amphiloma murorum* (Abeleven, 1898: 26).

Utrecht: Utrecht, July 1849, *C. M. van der Sande Lacoste*, on wall of cathedral (NBV).

Noord-Holland: Amsterdam, Zaagmolenpoort, Dec. 1848, *C. M. van der Sande Lacoste*, on bricks of town-wall, in part c. apoth. (NBV); the same in 1849 (L, NVB).

Zuid-Holland: Katwijk aan Zee, 1 June 1941, *Maas G. 813a, 814*, on basalt of dike along mouth of river Oude Rijn (L); the same, Aug. 1942, *F. A. Stafleu* (U).

Zeeland: Zuid-Beveland, Goes, 1844, *E. B. van den Bosch*, on basalt of harbour-wall (NBV).

ICMADOPHILA Trevis.**I. ericetorum** (L.) Zahlbr.

In the 'Prodrômus' (1898: 34) Abeleven cited the present species, under the name of *Icmadophila aeruginosa*, from two localities. Both records, however, are erroneous. One collection is *Baeomyces roseus* Pers., the second *B. rufus* (Huds.) Rebert.; no collections of *I. ericetorum* are known from this country.

LECANIA Mass.**L. erysibe** (Ach.) Muddvar. **erysibe**

Thallus crustaceous, granular, dark grey. Apothecia sessile, with persistent, brownish grey thalline margin, up to 0.5 mm. diam. Disc naked, red-brown to black-brown. Hymenium colourless below, purplish brown above, or entirely of that colour, J + blue, turning dingy vinaceous with excess iodine, but this colour not persistent, changing back to blue, 45—50 (60) μ . Asci clavate, 8-spored, 35—47 \times 10—16 μ . Spores 2-seriate or clustered, 2-celled, ellipsoid, straight, rarely somewhat constricted at septum, colourless, 9.0—12.8 (16.8) \times 4.6—5.8 (6.4) μ . Paraphyses septate, simple, 1—2 μ , apices clavate-capitate, 3.5—6 μ !

Not previously recorded.

Utrecht: Tienhoven, 6 July 1942, *Maas G. 1999a*, on concrete of bridge (L).

Zeeland: Zeeuws-Vlaanderen, Ossensisse, Molenpolder, 4 July 1958, *Maas G.*

12518, on sandstone of dike (L); Ossensisse, Zeedorp, 4 July 1958, *Maas G. 12540*, on concrete wall of dike (L).

Limburg: Eysden, 17 July 1942, *Maas G. 2052b*, on brick wall along river Meuse (L).

var. proteiformis (Mass.) Boist.

Differing from var. *erysibe* in that (1) the thalline margin of the apothecium recedes at an early stage, and (2) the disc becomes very convex.

Not previously recorded.

Gelderland: Renkum, 1850, *L. H. Buse*, on concrete of wall (L).

Utrecht: Houten, April 1941, *F. A. Stafleu*, on concrete of fortification (U); Utrecht, 't Hemeltje, 26 April 1954, *Maas G. 9643a*, on concrete of fortification (L).

Zuid-Holland: Gouderak, 18 June 1947, *Maas G. 12458*, on cement between bricks of mill (L).

Zeeland: Noord-Beveland, St. Annapolder between Kortgene and Kats, 5 July 1958, *Maas G. 12557*, on sandstone of dike (L); Noord-Beveland, Wissekerke, Geersdijk, E. of harbour of Willemspolder, 5 July 1958, *Maas G. 12544*, on basalt of dike (L); Walcheren, north dike of Sloe, 4 Nov. 1940, *C. Brakman*, on stone (L); Zeeuws-Vlaanderen, Ossensisse, Molenpolder, 4 July 1958, *Maas G. 12519*, on sandstone of dike (L).

LECIDEA Ach. em. Th. Fr.

***L. scabra* Tayl.**

Thallus areolate, verrucose, grey, K —, C + reddish. Soralia punctiform to maculiform, fusing to sorediose patches, yellowish, C + reddish. Apothecia discoid, naked, black, margin receding, 0.5—0.8 mm. diam. Hymenium colourless below, blue-green toward concolorous epithecium, J + dark blue. Subhymenium pallid or brownish, gradually passing into red-brown tissue below. Parathecium dark brown-green or blue-green. Asci cylindrical-clavate, 8-spored, 73—85 × 14—17 μ . Spores 1—2-seriate, 1-celled, ellipsoid, colourless, 13.8—15.8 × 6.9—8.9 μ . Paraphyses filiform, septate, sparingly branched, anastomosing, about 2 μ , little incrassate at apex.

New to the flora.

Friesland: S.E. of Gaast, 28 Oct. 1928, *A. N. Koopmans*, on basalt of dike of Zuyder Sea (U).

Gelderland: Hoef, 25 Oct. 1941, *Maas G. 1646*, on brick of IJsselmeer dike (L); between Tuil and Haaften, 21 Dec. 1942, *Maas G. 2252*, on basalt of dike along river Waal (L).

Noord-Holland: Halfweg, Spaarnwouderdijk, 29 May 1943, *Maas G. 2517*, on sandstone of wall (L).

***L. tumida* Mass.**

Hypothallus black. Thallus crustaceous, areolate. Areoles plane or somewhat depressed, smooth to rugulose, pale grey to ash grey, with one to several crateriform, eventually confluent, bluish grey soralia. Upper surface J + bluish. Sterile.

New to the flora.

Gelderland: Hoef, 25 Oct. 1941, *Maas G. 1659*, on granitic stone of the IJsselmeer dike, exposed (L).

PARMELIA Ach.**P. intestiniformis** (Vill.) Ach.

Very poorly developed. The specimens may be considered as approaching *f. textilis* (Ach.) Vain. Considering the geographical and altitudinal distribution of the species in Europe, the find is certainly remarkable. New to the flora.

Drente: Noordlaren, May 1939, *J. Wassoher*, on erratic boulder (L).

RHIZOCARPON (Ram.) Th. Fr.

In accordance with Runemark (1956a: 48), the yellow species of the present genus are here treated separately from the brown species, which, of course, does not imply that the latter are understood as a uniform group. For the sake of completeness, the former, although already recorded in the second part of Runemark's monograph, are once more listed in this enumeration. In the second edition of the 'Prodrromus' (Abeleven, 1898: 44) the older collections all figured under the name of *Rh. geographicum a atrovirens*.

Rh. lecanorinum Anders

See Runemark (1956b: 108). New to the flora.

Drente: Havelte, 10 May 1941, *Maas G. 1131*, on granitic boulder of cairn (L).

Rh. lindsayanum Räs.

subsp. **lindsayanum**

See Runemark (1956b: 122).

Drente: Borger, May 1849, *R. B. van den Bosch*, on granitic boulder of cairn (L, NBV); the same, no date (NBV).

Rh. tinei (Torn.) Run.

subsp. **prospectans** (Räs.) Run.

See Runemark (1956b: 137).

Drente: Borger, no date, *R. B. van den Bosch*, on granitic boulder of cairn (NBV).

Gelderland: Putten, 26 March 1921, *W. P. ten Kate*, on dike of Zuyder Sea (L).

Noord-Holland: Amsterdam, no date, *C. M. van der Sande Lacoste* (L); Amsterdam, Zeeburg, 1844 & 1849, *C. M. van der Sande Lacoste*, on stones of sea dike (L, NBV).

The older collections of the brown species are enumerated in the 'Prodrromus' (Abeleven, 1898: 43—44) under *Rh. montagnei*, *Rh. petraeum* and its var. β *dendriticum*. As it appears, none of these were correctly identified.

Rh. concentricum (Dav.) Beltr.

Thallus cracky-areolate, whitish, K—, J—. Apothecia immersed, with black, persistent or indistinct margin, up to 0.8 mm. diam. Disc naked, black. Epithecium K—. Hymenium colourless, dark olive brown towards epithecium, J + blue, about 150 μ . Asci clavate, 8-spored, 98—112 \times 36 μ , Spores muriform, ellipsoid-obovoid, colourless, 34.5—45.3 \times 17.7—21.5 μ . Paraphyses septate, branched, anastomosing, 2 μ .

Not previously recorded.

Utrecht: Bunschoten, 22 Febr. 1920, *J. Hart de Ruyter*, on brick of Zuyder Sea dike (U).

Rh. constrictum Malme

Hypothallus black. Thallus areolate, grey-brown with slight purplish tinge, K—. Medullary hyphae J + blue. Apothecia immersed to appressed, with thin, black, receding margin, up to 0.8 mm. diam. Disc naked, black. Epithecium K—. Hymenium colourless, blackish green to olivaceous black-brown towards epithecium, J + blue, 90—130(150) μ . Asci not seen well-developed, clavate, 8-spored, \pm 95 \times 31.5—33.5 μ . Spores mostly badly developed, when immature outer cell-wall covered with thick, gelatinised, hyaline layer, originally 2-celled, strongly constricted at septum, finally each cell becoming submuriform in that in both transversal and longitudinal or oblique direction one or two septa subdivide the lumen, ellipsoid-obovoid, long colourless, slowly darkening to greenish or fuliginous, 26.9—33.5 \times 13.0—16.1(17.9) μ . Paraphyses septate, branched, anastomosing, 2—3 μ .

Not previously recorded.

Gelderland: Putten, 26 March 1921, *W. P. ten Kate*, on siliceous boulder of dike of Zuyder Sea (L).

Rh. obscuratum (Ach.) Mass.

Hypothallus black. Thallus areolate, grey-brown, K—. Medullary hyphae J—. Apothecia immersed to appressed, plane to convex, occasionally with papillate centre, with naked, black margin and disc, up to 0.6 mm. diam. Epithecium K—. Hymenium colourless, dark greenish to dark olive towards epithecium, J + blue, 80—130 μ . Asci clavate, 8-spored, 61—106 \times 20—37 μ . Spores 2-seriate to irregularly disposed, muriform (but cells not numerous), ellipsoid-obovoid, colourless, 23.3—32.2 \times 11.8—17.9 μ . Paraphyses septate, branched, anastomosing, 2—3 μ .

Magnusson (1952: 152) gives the height of the hymenium as 80—100 μ , but the range is really greater than indicated. In a Swedish specimen (Göteborg, Änggården, 5 July 1950, *Maas G. 7143*, collected in company of Dr Magnusson) the hymenium was found to attain a height of 110—140 μ . A similar variability will be found to exist in both the preceding and following species.

Drente: Lemele, Lemelerberg, 27 July 1941, *Maas G. 1358*, on pebbles in heath (L).

Gelderland: Beekhuizen, May 1849, *R. B. van den Bosch*, on flint in heath (NBV); Ubbergen, 4 Oct. 1872, *H. C. van Hall*, on pebble (GRO); Zutphen, July 1837, *J. Wittewaai*, on pebbles in heath (NBV).

Utrecht: Doorn, no date, *P. M. E. Gevers Deynoot*, on stone in heath (NBV); Rhene, Dec. 1861, *Th. Sprée*, on pebble (NBV); Zeist, 1841, *C. M. van der Sande Lacoste*, on pebbles in heath (NBV).

Noord-Holland: Hilversum, Aug. 1903, *J. H. Wakker*, on pebbles (L).

Noord-Brabant: Oss, Schayk, 30 May 1909, *J. H. Wakker*, on pebble in heath (L).

Rh. reductum Th. Fr.

Hypothallus black. Thallus areolate, grey-brown, K —. Medullary hyphae J —. Apothecia immersed, plane to convex, with naked, black margin and disc, up to 0.8 mm. diam. Epithecium K —. Hymenium colourless, olivaceous towards epithecium, J + blue, 110—120 μ . Asci clavate, 8-spored, 89—104 \times 20—24 μ . Spores irregularly 2-seriate, submuriform, with few cells, obovoid, colourless, 21.5—27.6 \times 9.8—12.0 μ . Paraphyses septate, branched, anastomosing, 2—2.5 μ .

New to the flora.

Gelderland: between Hulshorst and Elspeet, 5 April 1942, *Maas G. 12461*, on pebble in heath (L); between Otterlo and Hoenderlo, National Park 'Hoge Veluwe', 10 Aug. 1953, *Maas G. 9445*, on pebbles (L).

RINODINA (Ach.) S. F. Gray

R. salina Degel.

Thallus crustaceous, areolate, verrucose, brownish grey, K —. Apothecia sessile, with greyish to grey-brown thalline margin, up to 0.5 mm. diam. Disc naked, black-brown. Hymenium J + dark blue, turning dingy vinaceous to red-brown. Asci clavate, 8-spored, 40—57(65) \times 14—18(23) μ . Spores irregularly 2-seriate, polarilocular, ellipsoid to fabiform, not constricted at septum, brown, with the cell-wall very much thickened at septum and apices, lumina angular, (11.8)13.4—15.5(16.6) \times (6.4)6.7—8.5(9.0) μ . Paraphyses septate, furcate above, colourless, 2 μ thick, apices capitate, brown, 4—6 μ .

Although the number of collections listed below is limited, it may safely be concluded that, whereas the present species is fairly common in the western part of the country, it becomes rarer farther inland. This condition accords well with Degelius's statement (1939: 193) that in general the species is more frequent in the coastal regions than in central Europe.

Remarkably enough, no finds of the related *R. cacuminum* are known from the Netherlands.

Both *R. cacuminum* and *R. salina* have the same hymenial reaction to iodine. Malme (1896: 177) stated the hymenium of the former to become intensely blue. That is true if a weak solution is used, but an additional drop of iodine makes the hymenial gelatina and asci turn vinaceous to red-brown. This reaction is reversible, for if the iodine is driven out by a fresh drop of water the hymenium regains its blue colour.

There are a few samples of the present species in the herbarium, collected in former times, but they were either not recognised, or passed unnoticed as an admixture to other species.

Friesland: Vlieland, Kroonpolders, 31 March 1948, *Maas G. 4002b*, on brick of sluice (L).

Utrecht: Houten, April 1942, *F. A. Stafleu*, on concrete of fortification (U); Loosdrecht, Wijde Blik, 29 April 1942, *F. A. Stafleu*, on basalt of dike (U); Utrecht, 't Hemeltje, 26 April 1954, *Maas G. 9648b*, on concrete of fortification (L).

Noord-Holland: Amsterdam, Zaagmolenpoort, Dec. 1848, 1849, *C. M. van der Sande Lacoste*, on brick of wall (L); Bennebroek, 28 June 1942, *Maas G. 1976*, on brick wall (L); Bergen, de Voert, 12 May 1954, *Maas G. 9690*, on concrete of sluice (L).

Zuid-Holland: Dubbeldam, Kop van het Land, 21 Sept. 1941, *Maas G. 1489b*, on basalt of dike along river Merwede (L); Gouderak, 18 June 1947, *Maas G. 3716b*, on cement between bricks of mill (L); Hoogmade, Noord-Aa, May 1921, *Miss C. Cool*, on basalt of dike (L); Katwijk aan Zee, 1 June 1941, *Maas G. 815b*, on basalt of dike along river Oude Rijn (L); the same, Aug. 1942, *F. A. Stafleu* (U); Koudekerk aan de Rijn, Lage Waard, 19 April 1943, *Maas G. 2433b*, on brick of bridge (L); 13 Sept. 1953, *Maas G. 9472b*, on brick at base of wall of farm (L); Leiden, Rijnsburgerweg, 30 July 1944, *Maas G. 12455*, on cement of roof (L); Monster, 15 Nov. 1941, *Maas G. 1775a*, on cement of wall (L); between Nieuwkoop and Aarlanderveen, 19 June 1952, *Maas G. 8519b*, on brick of wall near milking-yard (L); Zoeterwoude, 21 Febr. 1921, *W. P. ten Kate*, on cement of wall (L).

Zeeland: Noord-Beveland, Wissekerke, Geersdijk, E. of harbour of Willemspolder, 5 July 1958, *Maas G. 12549*, on basalt of dike (L); Zuid-Beveland, Goes, 1851, *R. B. van den Bosch*, on wood of old paling (L).

Limburg: Epen, 23 June 1942, *Maas G. 1952b*, on brick of dam (L); Maastricht, St. Pietersberg, near frontier, 21 March 1950, *Maas G. 12459*, on flint in face of marly roek (L).

SARCOGYNE Flot.

S. pruinosa (Sm.) Körb.

Thallus endolithic. Apothecia appressed, discoid, caesio-pruinose, dark red-brown when moistened, margin elevated, naked and black, or partially pruinose, up to 0.6 mm. diam. Hymenium colourless, 90–100 μ . Epithecium brown. Parathecium brown, indistinctly differentiated towards the hymenium. Subhymenium pallid. Asei cylindrical-clavate, more than 100-spored, 63–87 \times 16–26 μ . Spores 1-celled, cylindrical-ellipsoid, colourless, 4.9–5.4 \times 1.3–1.8 μ . Paraphyses embedded in hymenial gelatina, septate, branched, anastomosing, 0.9–2 μ , apices clavate, 2.7 μ . Hymenial gelatina J + blue, soon turning brownish vinaceous.

The material is referable to what Magnusson (1936: 96) called var. *intermedia*, = var. *pruinosa* (see also Degelius in *Acta Horti gotoburg.* 20: 51, 1956). Magnusson (l. c. 87) stated that the hymenium becomes dark blue on applianee of J. This is true of Hepp, *Flecht.* Eur. 143; *Kryptog. exs. vindob.* 1658; *Massalongo, Lich. ital. exs.* 334, 335, 336; and *Rabenhorst, Lich. eur.* 172, of which I examined the material present in the Rijks-herbarium. However, in *Kryptog. exs. vindob.* 2266, as well as in a German collection seen by Magnusson (Oberammergau, Rainerhügel, 18 July 1891, *Schnabl, auf Dolomit*), the hymenium stains a rather paler blue, quickly changing to brown-vinaceous. This different behaviour towards J seems to have escaped the attention, but is not unique in the genus. Magnusson described a similar situation in *Sarcogyne simplex* (l. c. 66), only here the specimens with the hymenium staining persistently dark blue are in the minority.

New to the flora.

Limburg: Eis, Eiserberg, 25 June 1942, *Maas G. 1960b, 1961*, on outcrops of 'Kunrader' limestone (L).

XANTHORIA Th. Fr.**X. elegans** (Link) Th. Fr.

Thallus dark orange-yellow, darkening in centre, easily loosened from substratum. Lobes branched, contiguous in centre, discrete to overlapping towards margin, narrow, convex, flattened at tips, corticate on both sides, more especially the lower cortex clearly paraplectenchymatous. Apothecia sessile, with persistent, entire to crenate margin concolorous with thallus. Disc naked, bright orange, darkening with age. Asci clavate, 8-spored, $51-54 \times 13-19 \mu$. Spores 2-seriate, polarilocular, ellipsoid, colourless, $12.1-14.3 \times 6.3-6.7 \mu$, septum $3.6-4.5 \mu$ broad. Paraphyses septate, furcate above, colourless, apices clavate, orange, $5-7 \mu$.

Xanthoria elegans, although not entirely unknown from the lower parts of Western Europe, is decidedly rare at or little above sea level, and does not attain the size which is usual at higher altitudes or in boreal regions. Not previously recorded; the collection from Noord-Brabant was mistaken by the collector for *Placodium murorum*.

Overijsel: Diepenheim, 20 July 1941, *Maas G. 1154*, on roof of barn (L).

Utrecht: Utrecht, 't Hemeltje, 26 April 1954, *Maas G. 9634*, on concrete of fortification (L).

Zeeland: Zuid-Beveland, Schore, 27 June 1951, *B. J. J. R. Walrecht*, on wall of sea-dike (L).

Noord-Brabant: between Orthen and Hedel, 13 April 1898, *J. H. Wakker* (L).

References

- ABELEVEN, TH. H. A. J., 1898. Nieuwe lijst der Nederlandsche Korstmossen. In Prodr. Fl. batav., ed. altera, 2 (2).
- ARNOLD, F., 1884. Die Lichenen des fränkischen Jura. (Fortsetzung). In Flora 67: 307—338.
- BOSCH, R. B. VAN DEN, 1853. Lichenes. In Prodr. Fl. batav. 2 (2).
- DEGELIUS, G., 1939. Die Flechten von Norra Skäftön. In Uppsala Univ. Årsskr. 11.
- FRIES, TH. M., 1861. Lichenes arctoi. In N. Acta Reg. Soc. Sci. upsal., ser. 3, 3: 103—398.
- MAGNUSSON, A. H., 1950. On some species of *Blastenia* and *Caloplaca* with black apothecia. In Bot. Notis. 369—386.
- 1952. Lichens from Torne Lapmark. In Ark. f. Bot., ser. 2, 2 (2): 45—249.
- MALME, G. O. A:n, 1896. Lichenologiska notiser. V. Bidrag till kannedomen om de sydsvenska *Rinodina*-arterna af *sophodes*-gruppen. In Bot. Notis. 173—183.
- POELT, J., 1954. Die gelappten Arten der Flechtengattung *Caloplaca* in Europa. In Mitt. bot. Staatssamm. München 11: 11—31.
- RUNEMARK, H., 1956a. Studies in *Rhizocarpon*. I. Taxonomy of the yellow species in Europe. In Opera bot. 2 (1).
- 1956b. Studies in *Rhizocarpon*. II. Distribution and ecology of the yellow species in Europe. In Opera bot. 2 (2).