

---

**Lectotypification of *Echinocaulon nigrescens* and its transfer to the genus *Huismaniella* (Gelidiellaceae, Rhodophyta).**

Giovanni Furnari<sup>1\*</sup>, Mario Cormaci<sup>1</sup>, Giuseppina Alongi<sup>1</sup> & Cesira Perrone<sup>2</sup>

<sup>1</sup>*Department of Biological, Geological and Environmental Sciences, Section Vegetal Biology, University of Catania, Via A. Longo 19, 95125 Catania.*

<sup>2</sup>*Department of Biology, University of Bari "A. Moro", Via E. Orabona 4, 70125 Bari, Italy*

Feldmann (1931) described the new species *Echinocaulon nigrescens* for plants with a structure different from *Gelidium* in not showing intercellular rhizines and from *Gelidiopsis* in showing a single apical cell. The species forms turfs 1-1.5 cm high, with terete fronds, 250-400 µm in diameter, irregularly branched in all directions, with branches divaricate and subulate. Living thalli red-brownish, becoming black after desiccation. Frond grows by means of a single apical cell, and in transverse section presents a central tissue composed of rounded, thick-walled cells that in longitudinal section appear elongated, 4 to 8 times longer than broad, and associated in parallel longitudinal filaments; the length of these cells gradually decreases from the inside to the outside. The cortical tissue is composed of 2-3 layers of subspherical cells.

The anatomy of the species was illustrated by Feldmann (1931: fig. 8), whilst the habit of two specimens was illustrated in his pl. XII. Feldmann stated that the species is very frequent in midlittoral rocky pools of exposed sites from January to May at the islet of Joinville (now a peninsula) at Cherchell, Algeria.

The illustration published in the protologue (Feldmann, 1931, pl. XII) shows two isolates with no indication of the collection date.

Since *Echinocaulon* Kützinger 1843 is illegitimate being a later homonym of *Echinocaulon* Spach 1841 (*Polygonaceae*), Feldmann & Hamel (1934: 529) proposed *Gelidiella* as a new name for that genus to which they transferred *E. nigrescens* as *Gelidiella nigrescens* (J.Feldmann) J.Feldmann & G. Hamel (1934: 533).

The following specimens of original material have been examined. Herbarium abbreviations follow Thiers (2018).

- Herbarium Weber-van Bosse at the Naturalis Biodiversity Center, **L** 4043717 (Fig. 1). This sheet contains a specimen of *Echinocaulon nigrescens* collected on 21/1/1930 at Îlot Joinville with a label handwritten and signed by J. Feldmann.
- Herbier J. Feldmann at the Herbarium of the Laboratoire de Cryptogamie, Muséum National d'Histoire Naturelle, **PC** 0467189 (Fig. 2). This sheet contains three specimens labelled *Gelidiella nigrescens* (Feldmann) Feldmann et Hamel. The upper one was collected on 5/3/1930 at Cap Tirzine, côte W (probably on the Îlot Joinville) J.F. no. 168. The middle one collected on 6/5/1939 at Îlot Joinville, J.F. no. 352. The lower one collected on 21/1/1930 at Îlot Joinville, J.F. no. 78.
- Herbier J. Feldmann at New York Botanical Garden, **NY** 00937638 (Fig. 3). This sheet contains a specimen collected on 21/1/1930 at Cherchell, Îlot Joinville, leg. Feldmann, with a label handwritten and signed by J. Feldmann: *Gelidiella nigrescens* = *Echinocaulon nigrescens* Cotype.

Unfortunately, the sheet held at Herbarium University of California, **UC** 476246, cited by Santelices (2007: 295) as containing "an isotype of *Echinocaulon nigrescens* collected on

21/1/1930 at Cherchell and determined by Feldmann”, has been mislaid or lost (R.L. Moe, pers. comm.).

Since no holotype was indicated by Feldmann (1931), all the above specimens are syntypes of *Echinocaulon nigrescens*. The apparent indication “isotype” in the missing UC herbarium sheet is a mistake; the term “cotype” in the NY herbarium sheet is an obsolete term for syntype (Hawksworth, 2010).

Among the syntypes we have examined, **we here designate** as lectotype of *Echinocaulon nigrescens* the specimen L 4043717 (Fig. 1), as it has also been genetically analyzed (GenBank acc. n. KX184396, as *Parviphycus* sp.). The remaining specimens of the same collection (21/1/1930, Ilôt Joinville, Cherchell, Algeria) become isolectotypes, while all other specimens collected at the same locality from January to May 1930 become paratypes.

Phylogenetic analyses carried out by Boo *et al.* (2016) demonstrated that the herbarium specimen of *Echinocaulon nigrescens* L 4043717 belonged to *Huismaniella* G.H.Boo & S.M.Boo, a new genus referred to the *Gelidiellaceae*. On that occasion, inexplicably, it was not referred to *Echinocaulon nigrescens* but reported as an undescribed species “*Huismaniella* sp. 2” from Algeria (Boo *et al. op. cit.*).

Accordingly, we here propose the following new combination:

***Huismaniella nigrescens*** (J.Feldmann) G.Furnari, Cormaci, Alongi & Perrone, comb. nov.

Basionym: *Echinocaulon nigrescens* J.Feldmann, *Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord* 22: 229, 1931

Homotypic synonym: *Gelidiella nigrescens* (J.Feldmann) J.Feldmann & G.Hamel. *Revue Générale de Botanique* 46: 533, 1934.

We are grateful to the Drs Line Le Gall, Willem Prud'homme van Reine, and Richard Moe for assistance in Herbarium data. Line Le Gall and Roxali Bijmoer are particularly acknowledged for photos of Herbarium sheets. We also thank Dr William J. Woelkerling for nomenclatural advice.

Boo, G.H., Nguyen, T.V., Kim, J.Y., Le Gall, L., Rico, J.M., Bottalico, A. & Boo, S.M. (2016). A revised classification of the Gelidiellaceae (Rhodophyta) with descriptions of three new genera: *Huismaniella*, *Millerella* and *Perronella*. *Taxon*, 65(5): 965-979.

Feldmann, J. (1931). Contribution à la flore algologique marine de l'Algérie. Les algues de Cherchell. *Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord*, 22: 179-254.

Feldmann, J. & Hamel, G. (1934). Observations sur quelques Gélidiacées. *Revue Générale de Botanique* 46: 528-549.

Hawksworth, D. L. (2010). *Terms used in bionomenclature: the naming of organisms (and plant communities)*. Global Biodiversity Information Facility, Copenhagen, 215 pp.

Santelices, B. (2007). Testing the usefulness of attachment structures in the taxonomy of small-sized gelidioids. *Phycologia* 46(3): 293-299

Thiers, B. (2018). Index Herbariorum: A Global Directory of Public Herbaria and Associated Staff. New York Botanical Garden's Virtual Herbarium. [searched on June 2018] <http://sweetgum.nybg.org/ih/>

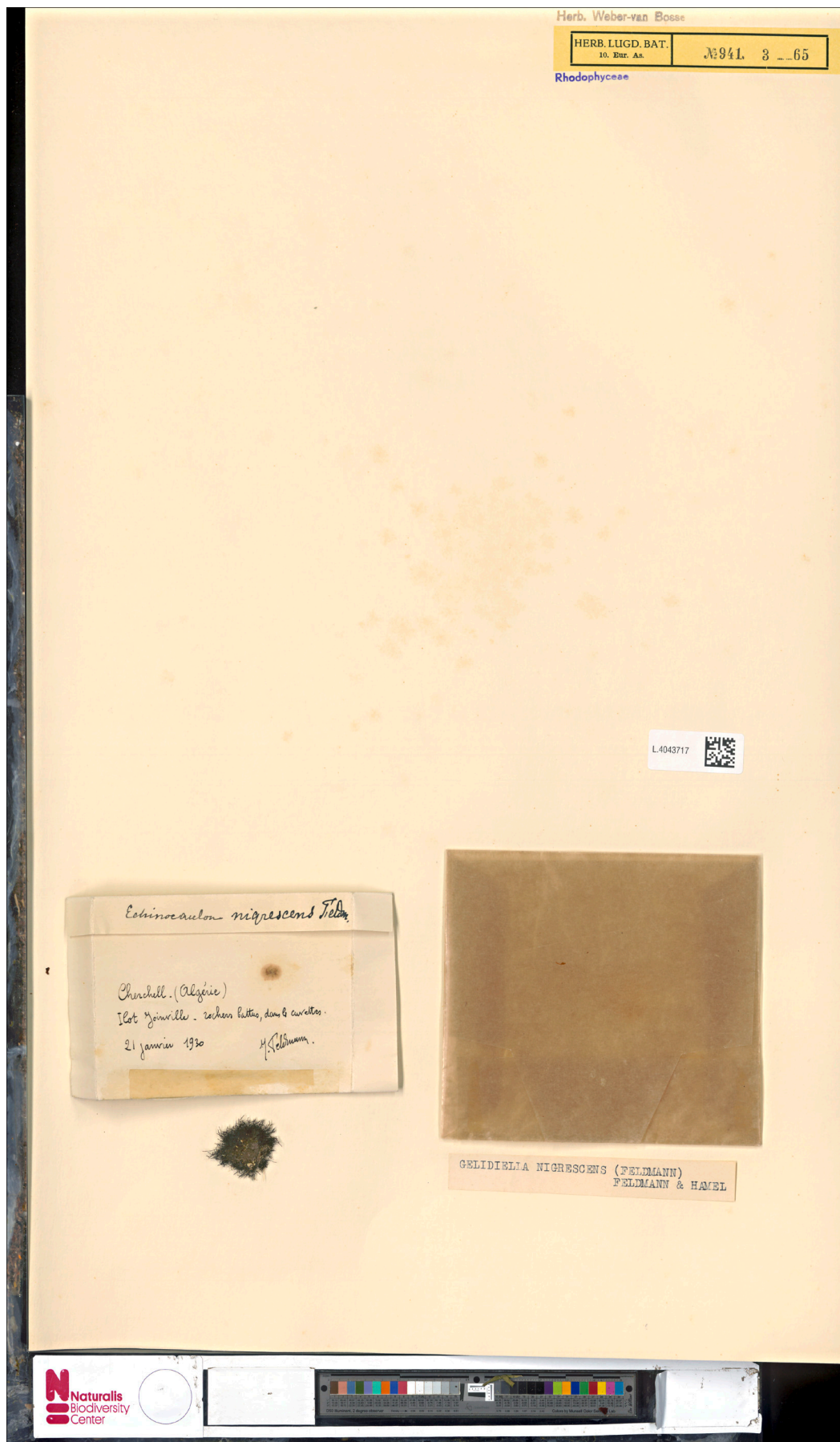


Fig. 1. *Echinocaulon nigrescens*. Lectotype - L 4043717. Photo by Roxali Bijmoer. x 0.45.





Fig. 2. *Gelidiella nigrescens*. PC 0467189. Photo by Line Le Gall. Paratypes (the upper specimens) and Isolectotypes (middle and lower specimens) of *Echinocaulon nigrescens*. x 0.50.

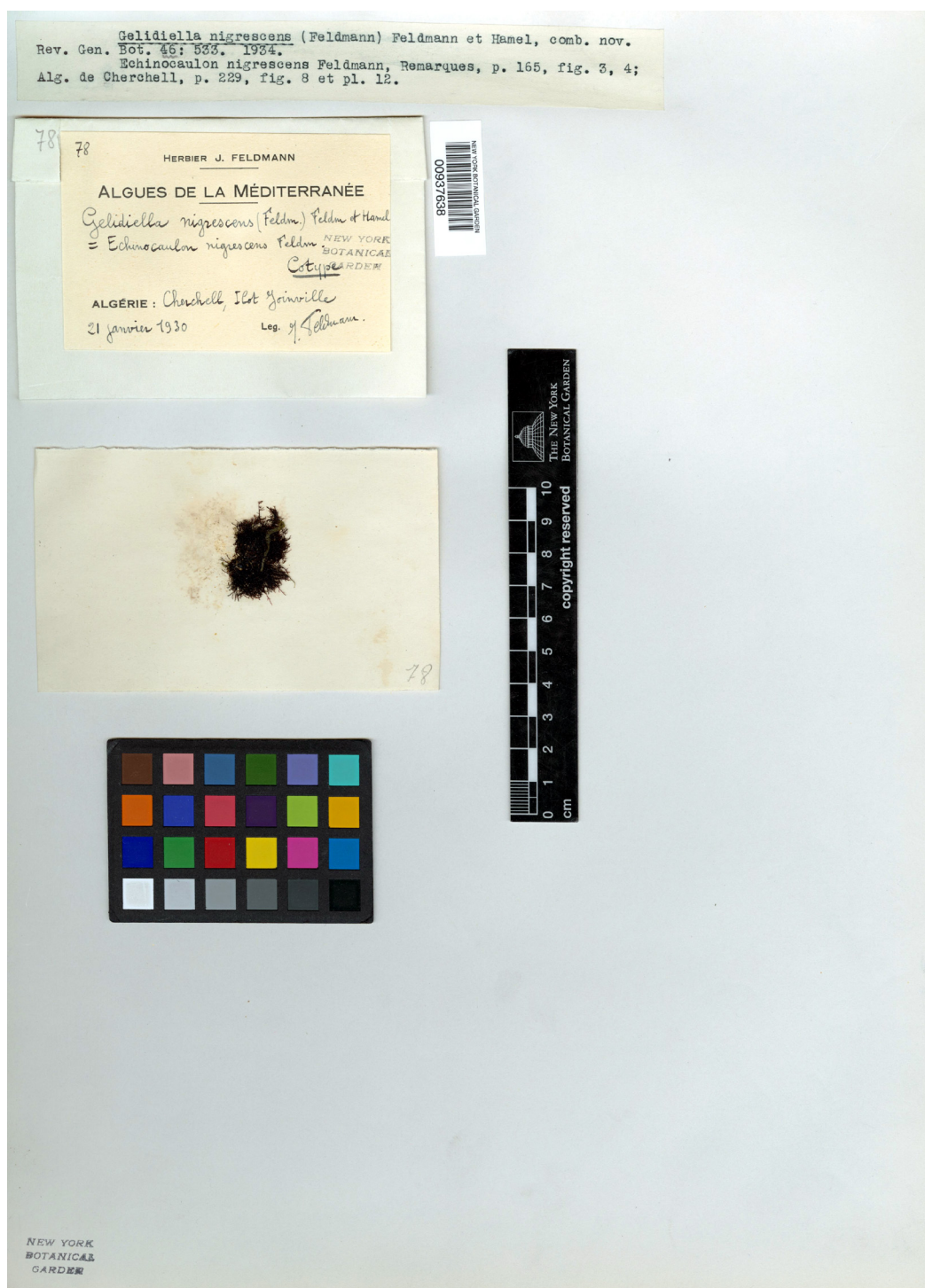


Fig. 3. *Gelidiella nigrescens*. Isolectotype (of *Echinocaulon nigrescens*). NY 00937638. Photo by Macroalgal Herbarium Portal (<http://www.macroalgae.org/portal/imagelib/imgsearch.php>).