

Observations on *Navicula schweickerdtii* Cholnoky and its transfer to the genus *Luticola* (*Diadesmidaceae*, *Bacillariophyta*)

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Cholnoky described several African taxa under *Navicula* Bory, *sensu lato*, some of which are representatives of the genus *Luticola* D.G.Mann (in Round & al. 1990). According to AlgaeBase (Guiry & Guiry 2022) the following Cholnoky taxa have been transferred: *Luticola kraeuselii* (Cholnoky) Metzeltin & Lange-Bertalot (1998), basionym: *Navicula kraeuselii* Cholnoky (Cholnoky 1954); *Luticola pseudolacertosa* (Cholnoky) Levkov, Metzeltin & A. Pavlov (Levkov & al. 2013), basionym: *Navicula pseudolacertosa* Cholnoky (Cholnoky 1966). *Navicula mutica* var. *pseudolagerheimii* (Hustedt) Cholnoky (Cholnoky 1956), on the other hand, is regarded as a heterotypic synonym of *Luticola intermedia* (Hustedt) Levkov, Metzeltin & A. Pavlov (Levkov & al. 2013).

A further taxon described by Cholnoky as *Navicula schweickerdtii* Cholnoky (Cholnoky 1952) has not been studied in depth, but its morphological features are undoubtedly those of a *Luticola*. Unfortunately, no type material or slides have been found in the Cholnoky collection, which is part of the South African National Diatom Collection, housed at the North-West University, South Africa, and must be presumed lost.

Luticola schweickerdtii (Cholnoky) Cocquyt & J.C.Taylor, *comb. nov.*

Basionym: *Navicula schweickerdtii* Cholnoky, *Boletim da Sociedade Portuguesa de Ciências Naturais*, 4 (1): 129, pl. VI: fig. 161, 1952.

Registration: <http://phycobank.org/103062>

Lectotype (here designated): [icon] Cholnoky 1952, fig. 161. Fig. 1 herein shows the scanned original drawing Cholnoky made on squared paper (each quadrant corresponding with a square of 5 x 5 µm), on which the final drawing in his 1952 publication is based. This original is kept at the South African National Diatom Collection, housed at the North-West University, South Africa.

Type locality: Mossy stones near water, Garuso (Mozambique), deep shade. Collected by H.G. Schweickerdt on 5 April 1952.

Ecology: Wet stones covered by mosses near water.

Description: Cholnoky's description reads (translated from German): "A previously unknown, tropical form from the group of the "*Naviculae mesoleiae*", which differs from *N. grimmei* Krasske [currently *Dorofeyukea grimmei* (Krasske) Kulikovskiy & Kociolek 2018)], which is much larger (8–21 µm long and 6 µm wide), but also more coarsely striated, around 25 striae in 10 µm – as well as from *N. voigtii* F.Meister [currently *L. voigtii* (F.Meister) D.G.Mann (in Round & al. 1990)] – which is also much larger, more robust and striated differently and only shows a resemblance to this species due to its curved porus [stigma] – and as well as from *N. mutica* Kützinger and all of its previously known forms. *Navicula schweickerdtii* has the following morphological characteristics: valves broad, oval-lanceolate, with obtuse and fairly broadly rounded poles. Raphe straight, central pores moderately far apart. The central area is extended almost to the margin of the valve, especially on the porus [stigma]-free side, where only short, small, punctiform striae can be observed. On the porus [stigma] side the shortened striae are

more pronounced. The porus [stigma] is strongly developed and has a very clear porus [stigma] channel that runs crookedly. The length of the specimens examined is 12–14 μm , the width 7–8 μm , they have 30–32 striae in 10 μm . The striae are fine, but at least clearly punctuate in phase contrast. So this species is much smaller and much more finely structured than the species with which it can be compared. The crooked, conspicuous porus is probably characteristic of a group of “*Naviculae mesoleiae*”, which seemed to be more common in the tropics. Whether a systematic-taxonomic revision of the forms as with *N. mutica* var. *tropica* is not necessary on this basis, remains an open question for the time being.”

Additional comments: Beside the type locality *Navicula schweickerdtii* has only been reported from Ghana by Foged (1966) from three localities: Bonsa River (14), a marsh near the Ankobra River (20) and a river near the town Humjibre (21). Samples from these localities all consisted of scrapings from the bottom. The information given by Foged (1966) on valve length and width, 12.6 μm and 7.6 μm respectively, and striae density, 30 striae in 10 μm , fits with Cholnoky’s description. However, the drawing provided by Foged (1966, pl. XI: fig. 6) shows a valve with a different valve outline and raphe to that illustrated by Cholnoky. The poles are more broadly rounded in the valve from Ghana. The raphe is straight with hooked central raphe endings while in *L. schweickerdtii* the raphe is slightly curved, although in his description Cholnoky mentions that the raphe is straight, and the central raphe endings are not hooked but gently continuing the slight curvature of the raphe.

Etymology: The taxon was named for the botanist Herold Georg [Wilhelm Johannes] Schweickerdt (1903–1977) who worked in South Africa, mainly on fungi and phanerogams. [Source: https://kiki.huh.harvard.edu/databases/botanist_search.php?mode=details&id=10929]

Table 1. Comparison of *Luticola schweickerdtii* with some morphologically related taxa.

	<i>L. schweickerdtii</i>	<i>Dorofeyukea grimmei</i>	<i>L. voigtii</i>
Length (μm)	12–14	18–21	24–78
Width (μm)	7–8	6	15.5–28
Striae/10 μm	30–32	25	16–18
Areolae/stria			10–15
Reference	Cholnoky 1952	Cholnoky 1952	Levkov & al. 2013

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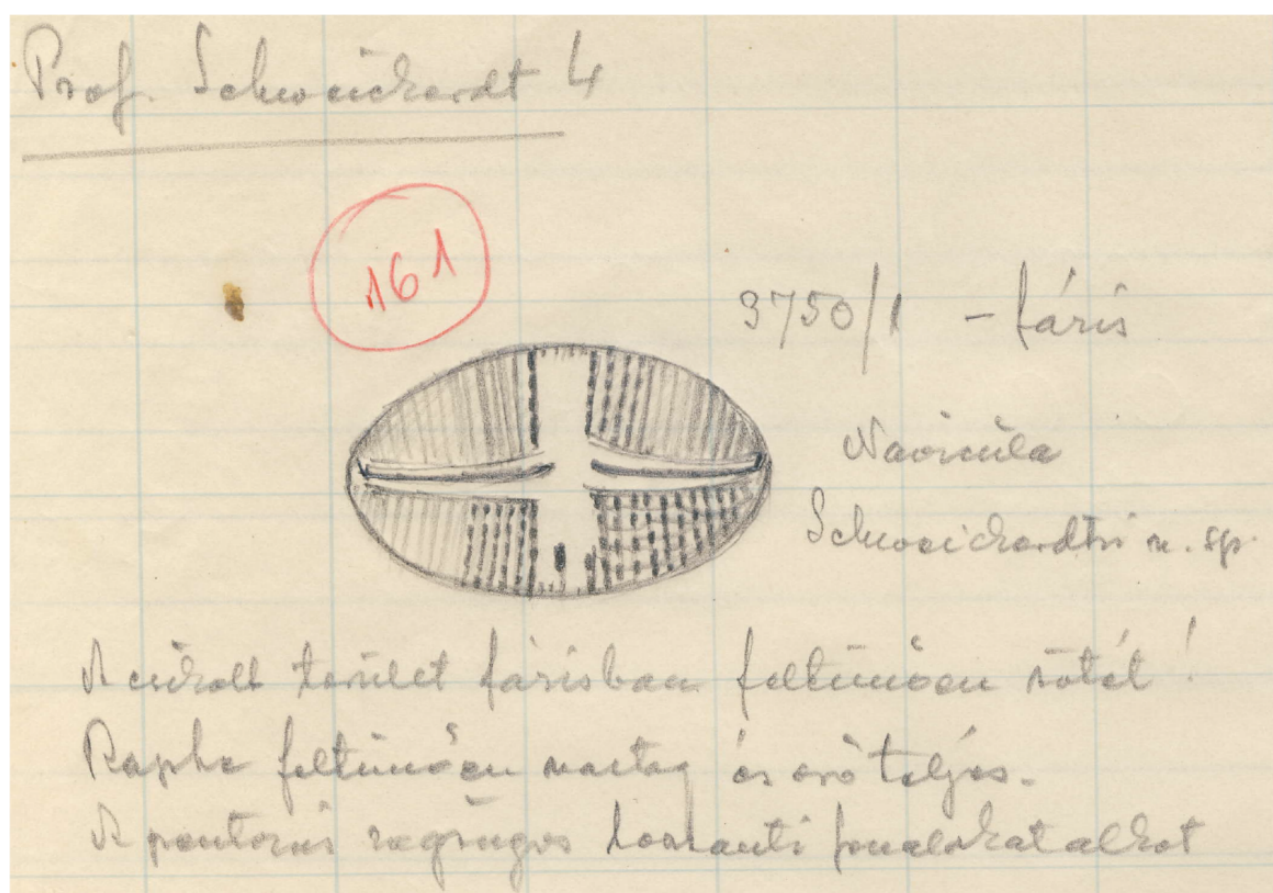


Fig. 1. *Luticola schweickerdtii*. Original drawing by Cholnoky, kept at the South African National Diatom Collection, housed at the North-West University, South Africa. Each quadrant corresponds with a square of 5 x 5 µm.