Introduction

Apart from the works by Pichi Sermolli, only a few recent scholarly publications have dealt with the vegetation of the Lake Tana basin. Results of field work in church forests from the Lake Tana basin[1] were analysed by Alemayehu Wassie et al. (2005), a paper by Alemnew Alelign et al. (2007) describes the forest on the Zegie Peninsula at the south-western corner of the lake, and a paper with observations from the Lake Tana Basin combined with observations from further afield resulted in the definition of 'Intermediate evergreen Afromontane forest (IAF),' a vegetation type intermediate between the 'Dry' and 'Moist Afromontane Forest' and including forests on the shores and islands in Lake Tana (Abiyot Berhanu et al. 2018). Less attention has been given to the open vegetation types, the woodlands, but they are included in a general analysis of the natural vegetation in the Lake Tana basin, or what remains of it (Chuangye Song et al. 2018), and are dealt with in a general work on the western woodlands of Ethiopia (Friis et al. 2022). Two papers by the botanist Oskar Sebald from Stuttgart in Germany, and written in German, report on a few localities at the southern shores of Lake Tana and the Semien (Sebald 1968, 1972), and the works by Sileshi Nemomissa & Puff (2001) and Puff & Sileshi Nemomissa (2001, 2005) have dealt with the flora of the Semien. A recent study has attempted to analyse the Afroalpine vegetation of the Semien (Getahun Tassew Melese et al. 2018). The publications are discussed in more detail in chapter 7, "Later studies…".

1 In central and northern Ethiopia the churches are mostly built on high ground and surrounded by trees that also occur in the remaining natural forests of the region; Pichi Sermolli also studied such church forests.

Ib Friis, Natural History Museum of Denmark, Denmark, ibf@snm.ku.dk, 0000-0002-2438-1528
Sebsebe Demissew, Addis Ababa University, Ethiopia, sebseb.demissew@gmail.com, 0000-0002-0123-9596
Odile Weber, National Museum of Natural History, Luxemburg, odile.weber@mnhn.lu, 0000-0002-0861-2752
Paulo van Breugel, HAS University of Applied Sciences, Netherlands, p.vanbreugel@gmail.com, 0000-0001-9579-0831

Referee List (DOI 10.36253/fup_referee_list)
FUP Best Practice in Scholarly Publishing (DOI 10.36253/fup_best_practice)

Ib Friis, Sebsebe Demissew, Odile Weber, Paulo van Breugel, *Plants and vegetation of NW Ethiopia. A new look at Rodolfo E.G. Pichi Sermolli's results from the 'Missione di Studio al Lago Tana', 1937*, © 2022 Author(s), CC BY 4.0, published by Firenze University Press, ISBN 978-88-5518-634-6 , DOI 10.36253/978-88-5518-634-6

Fig. 1. Group photograph of the members of the Lake Tana expedition. The leader, professor of geology and geography at the University of Florence, Giotto Dainelli, is seated in the middle. Pichi Sermolli is standing in the upper right corner. Next to him is the geologist Enzo Minucci, who accompanied him on the field work in the Semien Mountains and on other field trips.

Surprisingly, none of these works, with the exception of Sebald (1968, 1972) and Friis et al. (2022), draws on the large plant material and field observations from the Lake Tana Basin collected by Pichi Sermolli in 1937, and the only work resulting from the Lake Tana expedition mentioned in the standard work *Taxonomic Literature* (Stafleu & Cowan 1983: 252–253) is the reprint of a preliminary account of the botanical results of the Lake Tana expedition (Pichi Sermolli 1938a), while the largest work on the botanical studies from 1937, Pichi Sermolli (1951), is not cited.

Virtually unknown among botanists are Pichi Sermolli's large collections of photographs of the vegetation on the western escarpment of the Ethiopian highlands, the Lake Tana Basin and the Semien. Together with photographs taken by other members of the Lake Tana expedition (Fig. 1) they are deposited at the *Società Geografico Italiana* in Rome and are now made available on the home page of the society[2]. A portrait photograph of Pichi Sermolli on the expedition is reproduced here as Fig. 2. Born on

2 http://www.archiviofotografico.societageografica.it/

the 24th of February, 1912, Pichi Sermolli celebrated his 25th birthday at the small town of Quonzela [Consuela, Consela] on the south-western shore of Lake Tana, collecting plants at the lake shore. Due to the fact that Pichi Sermolli's research on the Lake Tana expedition is so relatively unknown, it is appropriate to make known both the history of the botanical collections, the collections of photographs and the publications dealing with the field work, as well as to attempt a modern analysis of the botanical collections and what they may tell us about the vegetation.

It is also unfortunate that Pichi Sermolli's valuable scientific results have not been used more in the development of science, particularly in Ethiopia, because the Italian language in which they are published is not more widely read. These results should be more widely known, and the present authors hope that this publication will help to remedy that problem. We provide commented translations of the papers that present the field observations and we analyse the updated lists of the herbarium collections. In contrast, Pichi Sermolli's many later publications in English, mainly his work on ferns, are widely read.

By reconstructing the sequence of Pichi Sermolli's 1937 collections and databasing the species, we have localised his collecting localities as precisely as possible. By reconstructing and updating the identification of the collections made at each site, it has been possible to draw conclusions about the vegetation of the localities and compare these with both of the recent reconstructions of the natural habitats of Ethiopia, Friis et al. (2010) and Friis et al. (2022), opening up hitherto unused information. We have also connected our interpretations of the modern vegetation with Pichi Sermolli's many photographs of landscapes, which are preserved as negatives and kept in photographic archive "Fondo Missione Dainelli al Lago Tana, lotto 501" at the *Società Geografica Italiana* in Rome.[3]

The analysis in this paper is a much extended successor to work made for a paper by Friis (2015), where initial observations were made on the importance of Pichi Sermolli's 1937 collections. That paper was written to celebrate, on the 3rd of October, 2014, the centenary of the Tropical Herbarium in Florence (*Centro Studi Erbario Tropicale*), the institution which holds the most complete set of Pichi Sermolli's collections from the Lake Tana expedition. The Tropical Herbarium in Florence was originally initiated in 1904 by Pietro Romualdo Pirotta as the *Erbario Coloniale* at the "La Sapienza" University in Rome, intended to house material coming from the Italian colonies of Eritrea and Somalia. But when, in 1913, a National Herbarium in Florence was planned, Pirotta, convinced of the usefulness of this initiative, accepted to move the *Erbario Coloniale* to Florence in 1914, in the same building as and next to the National Herbarium. The *Erbario Coloniale* was later renamed as *Erbario Tropicale* (FT), and incorporated as a centre for research, the *Centro Studi Erbario Tropicale* (CSET), at the University of Florence. The paper by Friis (2015) on Pichi Sermolli's 1937 collections had three main purposes: firstly to approximately localize Pichi Sermolli's collecting localities, secondly to evaluate the importance of the floristic discoveries of the Lake Tana expedition by comparing the new taxa described by Pichi Sermolli (1951) with the modern taxonomic concepts in the *Flora of Ethiopia and Eritrea* (Hedberg et al. 1989, 1995, 2003, 2004, 2006, 2009a, 2009b; Edwards et al. 1995, 1997, 2000), and thirdly to trace the ways in which the material had been collected, identified and then integrated in the *Erbario Tropicale* and duplicates distributed. In Florence, Pichi Sermolli's work on the 1937 expedition initiated a more systematic and regular treatment

3 http://www.archiviofotografico.societageografica.it/index.php?it/152/archivio-fotografie

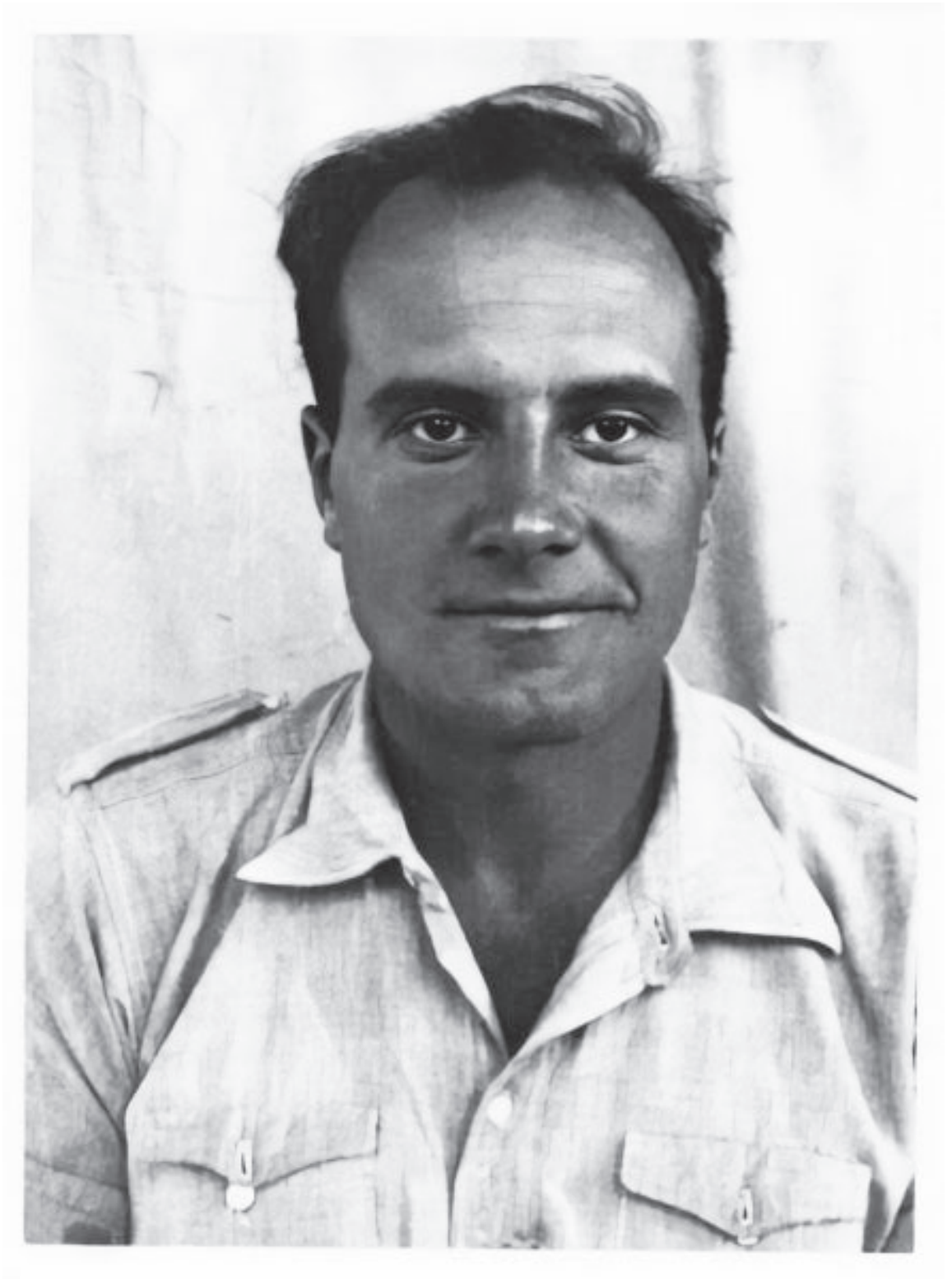

Fig. 2. Official portrait of R.E.G. Pichi Sermolli on the Lake Tana Expedition in 1937.

of collections than had previously been the case and, most of all, Pichi Sermolli's work meant an internationalisation of Italian tropical botany by international collaboration and exchange of specimens. In the paper from 2015, a publication with a more complete analysis was promised, and this is what we present here.

The main purposes of the present work is to give a modern interpretation of Pichi Sermolli's botanical collections and observations from the 1937 expedition, hopefully making them easier for modern botanists to utilise, both abroad and in Eritrea and Ethiopia, not least in the new universities in the Amhara Region, where Pichi Sermolli made his studies: the Bahar Dar University, the University of Gondar, the Debre Markos University and the Debre Tabor University, and possibly also some of the universities in Tigray. The documentation of Pichi Sermolli's observations from the Semien will also benefit the staff and researchers at the Semien National Park.