

The artistic view of a botanist-ecologist on the landscape and flora of the Colombian páramo region

La visión artística de un botánico-ecólogo sobre el paisaje y la flora del páramo colombiano

Abstract

Antoine Cleef studied the vegetation of the Colombian and Ecuadorian páramo for four decades. After a brain haemorrhage in December 2018, he lost his speech and his ability to write. He learned to paint with his left hand. Photographs from his fieldwork in the páramo on A4-size now inspire his watercolour paintings. With the precision he illustrated plants and vegetation in the past, and the current artistic freedom in intensifying and changing colour, his images increase the beauty of the Colombian páramo. Enchanting landscapes are brilliant, cloudy, sunny, and nightly, reflecting unprecedented images of the Colombian páramo. Besides being a vegetation scientist, surprisingly, Antoine Cleef has shown to be a talented painter.

Keywords: Alpine belt; Andes; Colombia; Elevation; Landscapes; Páramo; Treeline; Vegetation; Watercolour.

Resumen

Antoine Cleef estudió la vegetación del páramo colombiano y ecuatoriano durante cuatro décadas. Tras una hemorragia cerebral en diciembre de 2018 perdió el habla, así como la capacidad de escribir. Aprendió a pintar con la mano izquierda. Las fotografías de su trabajo de campo en el páramo en tamaño A4 le sirven ahora de inspiración para sus cuadros en acuarela. Con la precisión con la que ilustró las plantas y la vegetación en el pasado, y la libertad artística actual a la hora de intensificar y cambiar los colores, sus imágenes han sabido acrecentar la belleza del páramo colombiano. Paisajes encantadores, brillantes, nublados, soleados y nocturnos, reflejan imágenes inéditas del páramo colombiano. Aparte de ser un científico de la vegetación, sorprendentemente, Antoine Cleef ha demostrado ser un pintor de talento.

Palabras clave: Cinturón alpino; Andes; Colombia; Elevación; Paisajes; Páramo; Arbolado; Vegetación; Acuarelas.

Introduction

Plants growing above the treeline suffer harsh conditions (Birks, 2021). Daily night frost, intense UV radiation, mechanical damage of rock debris, and poor plant growth conditions make the tropical alpine biome special. The cycle of winter and summer seasons occurs within 24 hours. In the northern Andes páramo, above the treeline, vegetation extends from ca. 3200 m to the snowline at ca. 5000 m (Cleef, 1981; Cuatrecasas, 1958; Flantua *et al.*, 2019; Mavarez, 2021; Luteyn, 1999; Rangel Ch, 2018). The most characteristic páramo vegetation in Colombia is the Espeletia woody stem rosettes. Páramos can be very cloudy but holes in the cloud cover may open windows that offer a view of a tiny part of the vegetation. Almost touching the clouds, the tall stem rosettes evoke monks (*frailes* in Spanish) assembled in circles, which explains their local name: *frailejones*. These iconic plants of woody stems show a variety in height, from sessile stem rosettes reaching some 50 cm to man-sized plants of ca. 1.5 to 2 m tall (most of the species) and species reaching ca. 5 to 6 m such as *Espeletia uribei*. Stem rosettes have been the object of debate concerning

the treeline elevational position (Cuatrecasas, 1934) as ‘woody stem’ and ‘man-sized’ are used to define trees (Körner, 1999). However, the growth form of these iconic stem rosettes sets them apart from trees (Körner, 2021), therefore, the páramo was accepted as a tropical alpine biome positioned above the treeline (upper forest line) and reaching up to the perennial snowline.

Antoine Cleef (1941) is a tropical vegetation ecologist who studied at Utrecht University and led an academic career at Amsterdam and Wageningen universities. His doctoral thesis (Cleef, 1981) included a thorough analysis of the páramo vegetation of the Colombian cordillera Oriental. Henry Hooghiemstra (1948) is a palynologist and paleoecologist at the University of Amsterdam; he studied the history of the páramo vegetation during the Quaternary (Hooghiemstra, 1984), a geological period characterized by ice ages, under the supervision of Thomas van der Hammen (1924-2010) (Hooghiemstra, 2024a). In the 1940s, Frans Florschütz (1887-1965), Thomas’ supervisor at Leiden University, changed the focus of international palynological studies in Latin America to serve the oil industry (Hooghiemstra & Richards, 2022). Thomas van der Hammen was the initiator of palynological studies into the area of Latin America, especially in Colombia. He unveiled the histories of many Colombian ecosystems and promoted the study of the modern páramo vegetation. Most importantly, Van der Hammen integrated many disciplines, including geology, ecology, soil science, climatology, vegetation studies, and paleoecology, advancing notably in understanding how these disciplines relate to each other. He was among the first geo-ecologists of the 20th century (Correal-Urrego, 1983; Fondo FEN Colombia, 1995; Hooghiemstra, 2024a, 2024b, 2024c; Hooghiemstra *et al.*, 2010; Rangel-Ch., 2010; Van der Hammen-Malo, 2016).

Antoine Cleef suffered a brain hemorrhage in December 2018. He lost his speech and fine motor skills in his right hand, so he taught himself to paint with his left hand (Figure 1). Since 2020, he has painted over sixty watercolours of the páramo vegetation where the



Figure 1. Antoine Cleef painting in the art studio of the Jan Ligthartcentrum in Bussum (Netherlands). Photograph: Henry Hooghiemstra

geomorphology of the high Andes and the people who live there are central. The giant stem rosettes from the Colombian páramo belong to the Espeletiinae group with eight genera (Díazgranados & Barber, 2017; Mavarez, 2021). The páramo biome experienced a fast evolution during the last one million years (Madriñan *et al.*, 2013). The diversity of plant habitus and the scenic places where they grow give endless inspiration to the painter. Nico Bierlaagh, from the Jan Ligthart Art-Studio in Bussum, characterized Antoine's skills as follows: *Art starts where reality is ending, an expression which applies to the watercolours of Antoine. In his own way he translates the photographs he made in the past in a very personal idiom: he simplifies the forms and intensifies the colours. In this way, unique landscapes arise*" (Cleef, 2023).

José Cuatrecasas (Cuatrecasas, 1948) published an impressive mural-sized photograph showing the páramo vegetation and landscape, but Antoine Cleef's images are unprecedented expressions of the beauty of the páramo (Plates 1 to 6). By intensifying and changing colours, he has highlighted the enchanting páramo landscapes (Figure 2). Painting *Polylepis* trees in blue, greening the landscape of the yellowish páramo grass, and enlightening the colours of geological formations outcrops, he has managed to show the páramo landscapes as illustrations for a fairytale.



Plate 1. Left: #01 'Beauty' (*Espeletia*) [18x25 cm]; Middle: #57 'Pentacalia pink flowers' [24x30 cm]; Right: #05 'Indigena' [24.5x34 cm]. Numbers refer to the collection of scans archived by H. Hooghiemstra.



Plate 2. Top: #12a 'Espeletia meadow' [24x32 cm]; Bottom: #23 'Páramo at night' [19.5x28.5 cm]



Plate 3. Top: #32 '*Polylepis* forest in blue' [21x30 cm]; Middle: #41 'Campesino on horseback' [24x32 cm]; Bottom: #45 'Open vegetation at 1100 m elevation in the Chicamocha Valley' [24x30 cm]

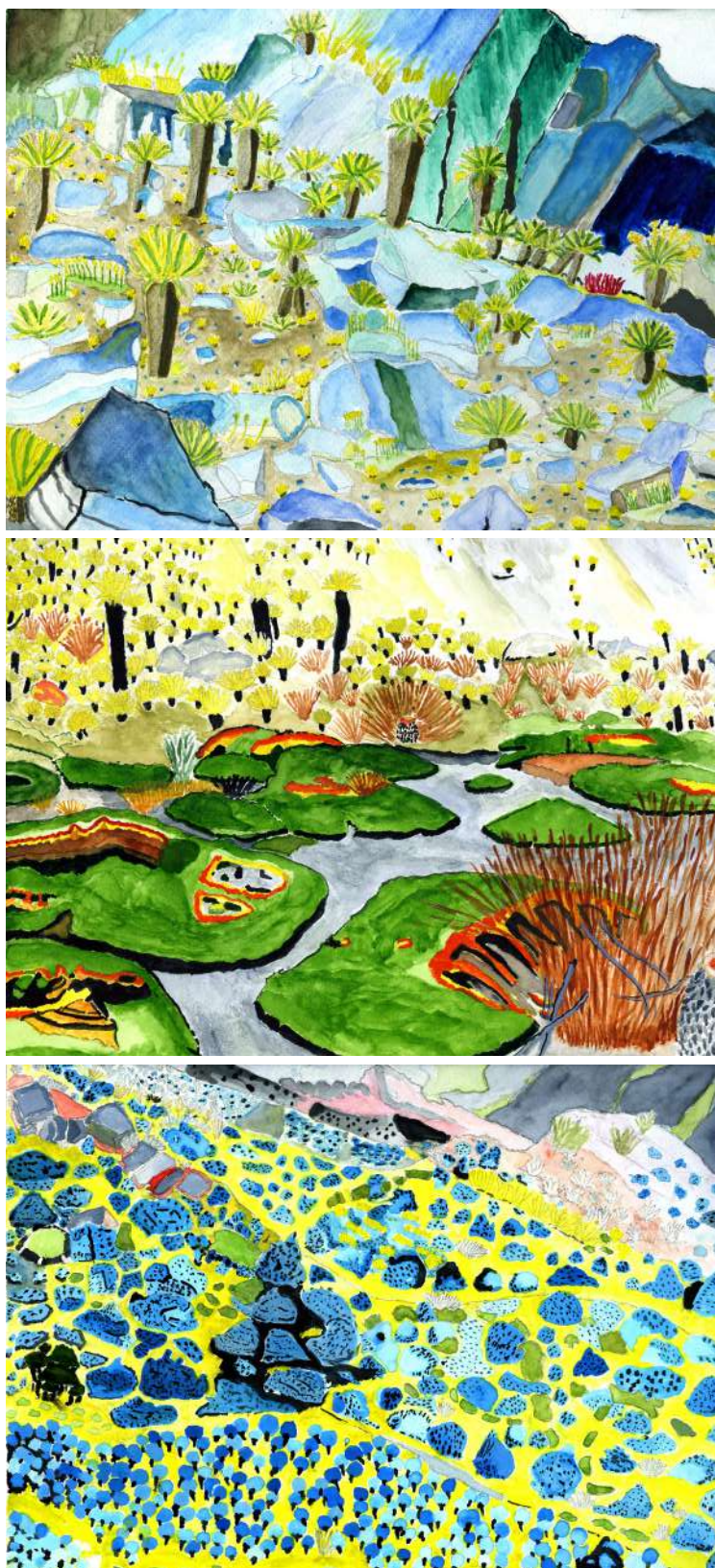


Plate 4. Top: #46 'Frailejones on the rocks' *Espeletia cleefii* [24x32 cm]; Middle: #48 'Distichia cushions' [24x30 cm]; Bottom: #53 'Páramo in blue' [24x30 cm]



Plate 5. Top: #55 Frailejón (*Espeletia barclayana*) [19x30 cm]; Middle: #59 'Woody stem Espeletia' (*Espeletia* sp.) [30x24 cm]; Bottom: #60 '*Paepalanthus alpinus*' [30x21 cm]



Plate 6. Top: #28 'Páramo in orangeblue' [24x32 cm]; Middle: #64 'Abiotic superpáramo Cocuy' [30x23.9 cm]; Bottom: #63 'Mieke Cleef reading in the páramo' [29.9x23.9 cm]

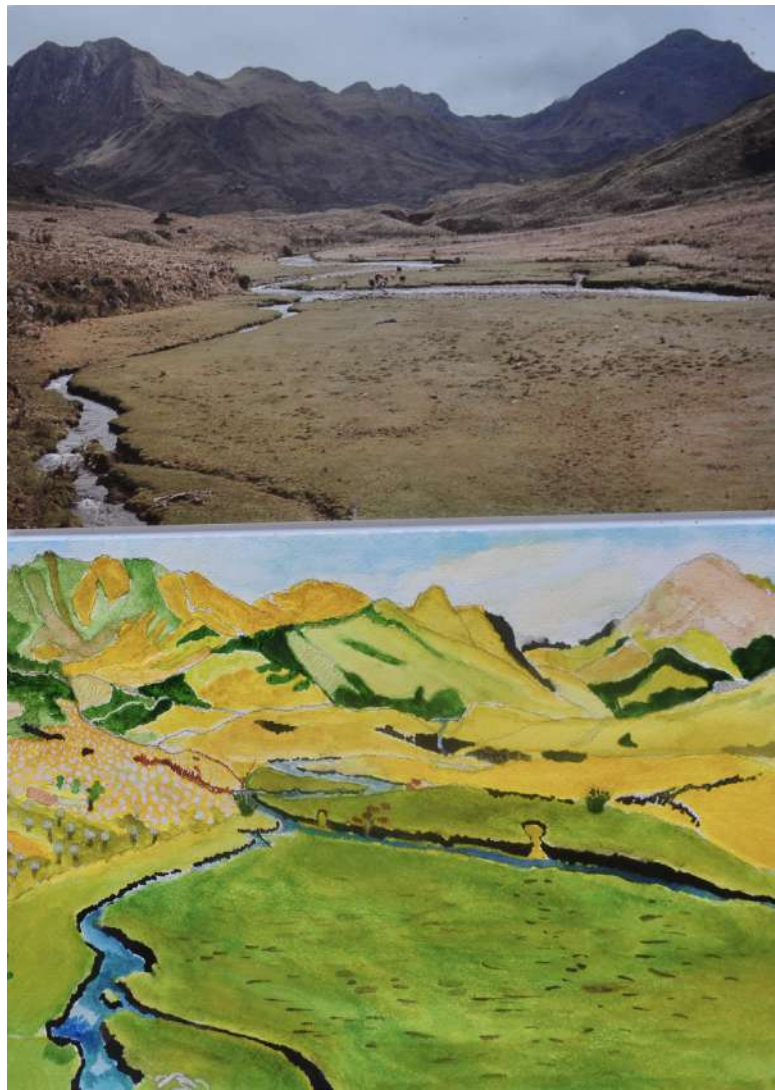


Figure 2. Example of a photograph of a páramo landscape and Antoine's artistic interpretation. Photograph: H. Hooghiemstra

These unique paintings, based on reality but transformed by Antoine into enchanting landscapes, justify this paper. Here, we present only a selection of his watercolours disseminate Antoine Cleef's images of the páramo based on his careful observation merged with his artful ability and his love for high mountain nature.

A selection of watercolours

Antoine painted his watercolours starting in 2019. The sequence is unknown as they were not dated. However, part of the chronology can be inferred from their scanning dates: numbers 1 to 39 were scanned in 2022, numbers 40 to 56 in 2024, and numbers 57 to 64 in 2025. Originals were given as presents, so the 300 dpi, 600 dpi, and 1200 dpi scans constitute the most complete collection. Names were given by Hooghiemstra for their exhibit at the *Congreso Latinoamericano 'Ecología y conservación de ecosistemas altoandinos'*, held in July-August 2024 in Quito, Ecuador. Most of the watercolours are in A4 size (21 x 29.5 cm), although some are slightly larger. In these cases, the scanning has been adjusted to the A-4 size.

Retrospect

Two persons inspired Antoine Cleef (1941) to study natural environments: Johannes Bernardus (Bernard) Bernink (1878-1954) and his Natural History Museum in Denekamp (Netherlands), and professor Thomas van der Hammen (1924-2010) from the University of Amsterdam Hugo de Vries laboratory. The illustrations in his PhD thesis (Cleef, 1981) already showed his skills in drawing, which somehow awakened and further developed after his brain hemorrhage. The first publication of his watercolours (Cleef, 2023) was a book of very limited edition. Catalina Giraldo-Pastrana, director of the documentary 'Sky Islands', which explains the high biodiversity of the páramo flora (Giraldo-Pastrana *et al.*, 2019) wrote in 2025: *Beautiful emotions are conveyed through Antoine's watercolour paintings. The book speaks directly to my heart and inspires beautiful dreams, as I feel engaged and connected to him through his paintings.* Antoine's creativity merges careful science and unconditional art, a combination that deserves a wider distribution. The text of the book was written by Henry Hooghiemstra and read and commented on by Antoine, who agreed to publish the final draft (Cleef, 2023).

Antoine was very keen on the well-known Spanish expression 'Nadie sabe para quien trabaja' ('Nobody knows who he works for') and, indeed, the large collection of plants he assembled in his numerous botanical expeditions and scientific publications has found its way to the next generation of scientists through his watercolours. Perhaps it is time to bring them together for an exhibit in Bogotá, or for publishing a book.

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