MAGYAR AFRIKA TÁRSASÁG
AFRICAN–HUNGARIAN UNION

AHU MAGYAR AFRIKA–TUDÁS TÁR
AHU HUNGARIAN AFRICA–KNOWLEDGE DATABASE

PÓCS, Tamás

East African Bryophytes, XXXI. Validation of *Plagiochila fracta nomen nudum* (Jungermanniopsida)

Eredeti közlés /Original publication:
Phytotaxa, 2015, 56, 195, 2, 183–187. pp.
Elektronikus újraközlés/Electronic republication:
AHU MAGYAR AFRIKA–TUDÁS TÁR – 000.003.115
Dátum/Date: 2018. szeptember / September.
filename: pocs _2015_EastAfrBryophytesXXXI
Ezt az információt közlésre előkészítette
/This information prepared for publication by:
B. WALLNER, Erika és/and BIERNACZKY, Szilárd
Hivatkozás erre a dokumentumra/Cite this document:
PÓCS, Tamás: East African Bryophytes, XXXI. Validation of *Plagiochila fracta nomen nudum* (Jungermanniopsida), ***AHU MATT,*** 2018**, pp. 1–7. old.,** No. 000.003.115, http://afrikatudastar.hu
Eredeti forrás megtalálható/The original source is available:
Közkönyvtárakban / In public libraries
Kulcsszavak/Key words
magyar Afrika-kutatás, East African Bryophytes, XXXI. Validation of *Plagiochila fracta nomen nudum* (Jungermanniopsida) --- *Ceratolejeunea*, Comoro, Indian Ocean Islands, Madagascar, Mascarenes, Seychelles
African studies in Hungary, East African Bryophytes, XXXI. Validation of *Plagiochila fracta nomen nudum* (Jungermanniopsida) --- *Ceratolejeunea*, Comoro, Indian Ocean Islands, Madagascar, Mascarenes, Seychelles

Abstract.
The *nomen nudum Plagiochila fracta* Pócs was used for a species collected by Patricia Geissler during March of 1999 in Madagascar. The name was used in three publications, but was never properly and validly described. The aim of this paper is to provide a full description to this peculiar species, which seems to be endemic to the north-western region of Madagascar.

Phytotaxa 195 (2): 183–187
www.mapress.com/phytotaxa/

Article

ISSN 1179-3155 (print edition)
PHYTOTAXA
ISSN 1179-3163 (online edition)

http://dx.doi.org/10.11646/phytotaxa.195.2.8

Validation of *Plagiochila fracta nomen nudum* (Jungermanniopsida). East African bryophytes XXXI.

TAMÁS PÓCS[1]
Department of Botany, Institute of Biology, Eszterházy Károly College, Eger, Pf. 43, H-3301, Hungary; email: colura@upcmail.hu

Abstract

The *nomen nudum Plagiochila fracta* Pócs was used for a species collected by Patricia Geissler during March of 1999 in Madagascar. The name was used in three publications, but was never properly and validly described. The aim of this paper is to provide a full description to this peculiar species, which seems to be endemic to the north-western region of Madagascar.

Key words: caducous leaves, liverworts, Madagascar, Manongarivo Massif, *Plagiochila artsii*.

Introduction

A species of *Plagiochila* (Dumortier 1831: 42) Dumortier (1835:14) was collected by the late Patricia Geissler in an expedition aiming at a biological inventory of Manongarivo Massif (Antsiranana Province, NW Madagascar), which yielded in 19 taxa new to Madagascar, four for the whole of Africa, and another seven proved to be new to science (Pócs 2001, Pócs & Geissler 2002, Pócs & Váňa 2002, Sass-Gyarmati 2001). Some of them are still undescribed. The name *Plagiochila fracta* Pócs was used in Pócs & Geissler (2002: 61) without description for an interesting tiny species with leaf fragmentation most probably serving as a means of vegetative propagation. The species was later placed in sectio *Rutilantes* Carl (1931: 83) by Heinrichs *et al*. (2005: 322) in their sectional subdivision of the tropical African representatives of the genus. The *nomen nudum Plagiochila fracta* is here validated and the species is described.

Taxonomy

Plagiochila fracta Pócs *sp. nov.* (**Figs 1–3**).

Type:—MADAGASCAR. Antsiranana (Diego Suarez) Prov. Réserve spéciale de Manongarivo Ambahatra, cours supérieur; 13°59'S; 48°26'E. Crête entre les deux bras de l'Ambahatra, ca 800 m au N point côte au-dessus du camp 2, elevation: 1250–1300 m. Arête, dans une forêt montagnarde. Substrat: Rocher. (fragments of decaying wood can be observed on the lower side of the specimen). 9 March 1999, *P. Geissler19691/1* (holotype: G!, isotypes: EGR!, GOET!).

Diagnosis:—In herbarium dark green plant with irregular branching, forming dense, adherent mat of 3–5 cm diameter. From the creeping, leafless but with scattered rhizoids covered, rhizomatous primary stem 5–10 mm long, often bifurcate branches arise. Leafy shoots 0.8–1.3 mm wide, sometimes flagelliform shoots also occur with reduced leaves (Fig. 1 A–B). Stem 80–130 µm thick, with 1(–2) layered cortex with pale rusty colored cell walls and 6–8 cells thick medulla of smaller cells with thinner, colorless walls (Fig. 1 C). Leaves, if intact, somewhat elongate, falcate with parallel and entire sides, convex, 400–500 µm long and 200–250 µm wide, apex rounded or 2–4 lobulate (Fig. 2). Insertion inverted J shaped, dorsal base cuneate, ventral base shortly decurrent to the midline of the stem, where very rarely filiform amphigastria occur (Fig. 1 D–E). The leaves are extremely fragile, many of them already at the habitat broken away along the midline of cell walls, forming an irregular dehiscence line (Fig. 3 A). The leaf fragments probably serve the

Accepted by Matt Von Konrat: 25 Dec. 2014; published: 23 Jan. 2015

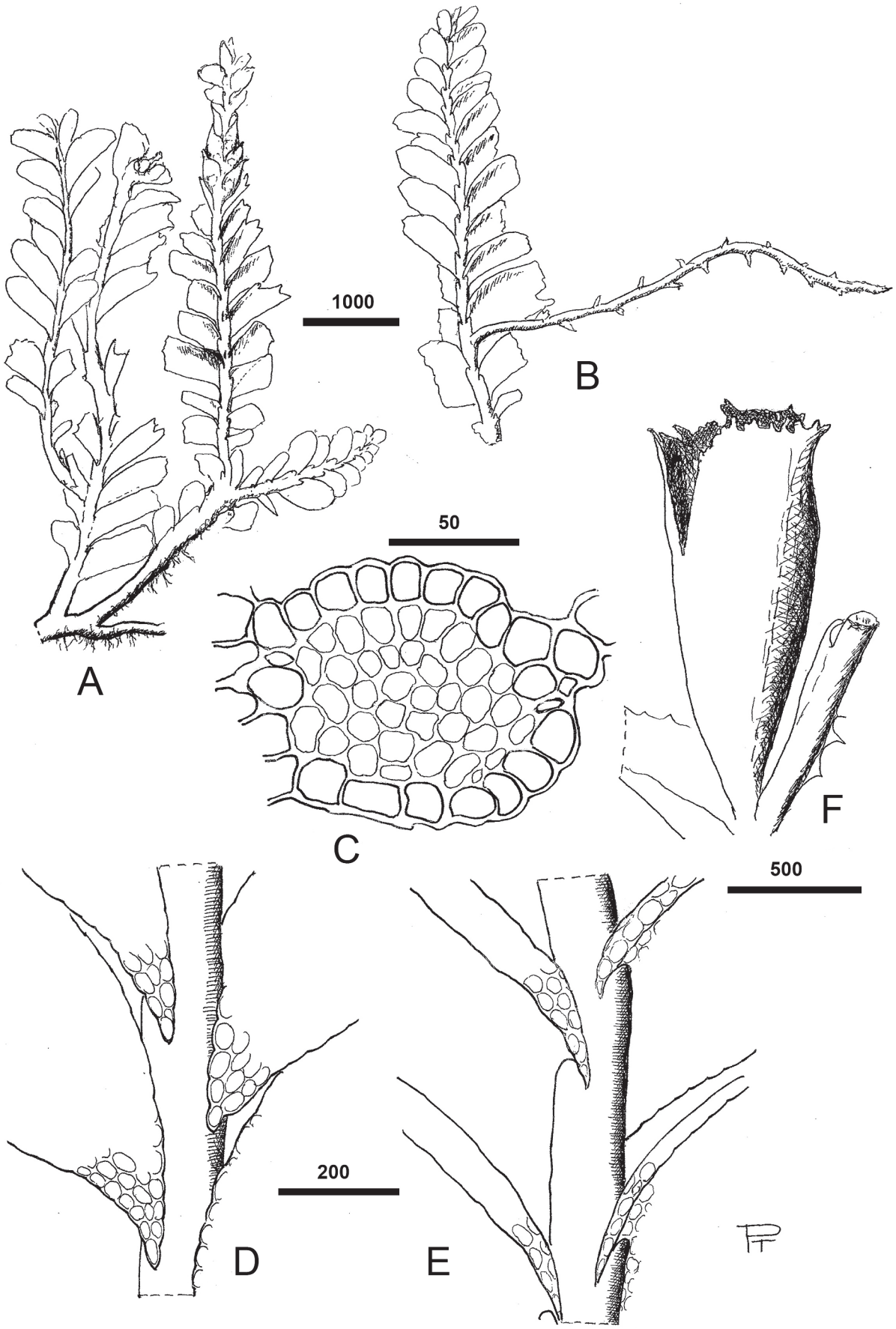

FIGURE 1. Line drawings of *Plagiochila fracta sp. nov.* from *Geissler19691/1* (holotype, G). A: Habit, dorsal and ventral view. B: Habit, ventral view, with a flagelliform branch. C: Stem of primary branch, transversal section. D: Leaf insertions, dorsal view. E: Leaf insertions, ventral view. F: Mature perianth in dry state. Scale bars in all figures are in micrometers (μm).

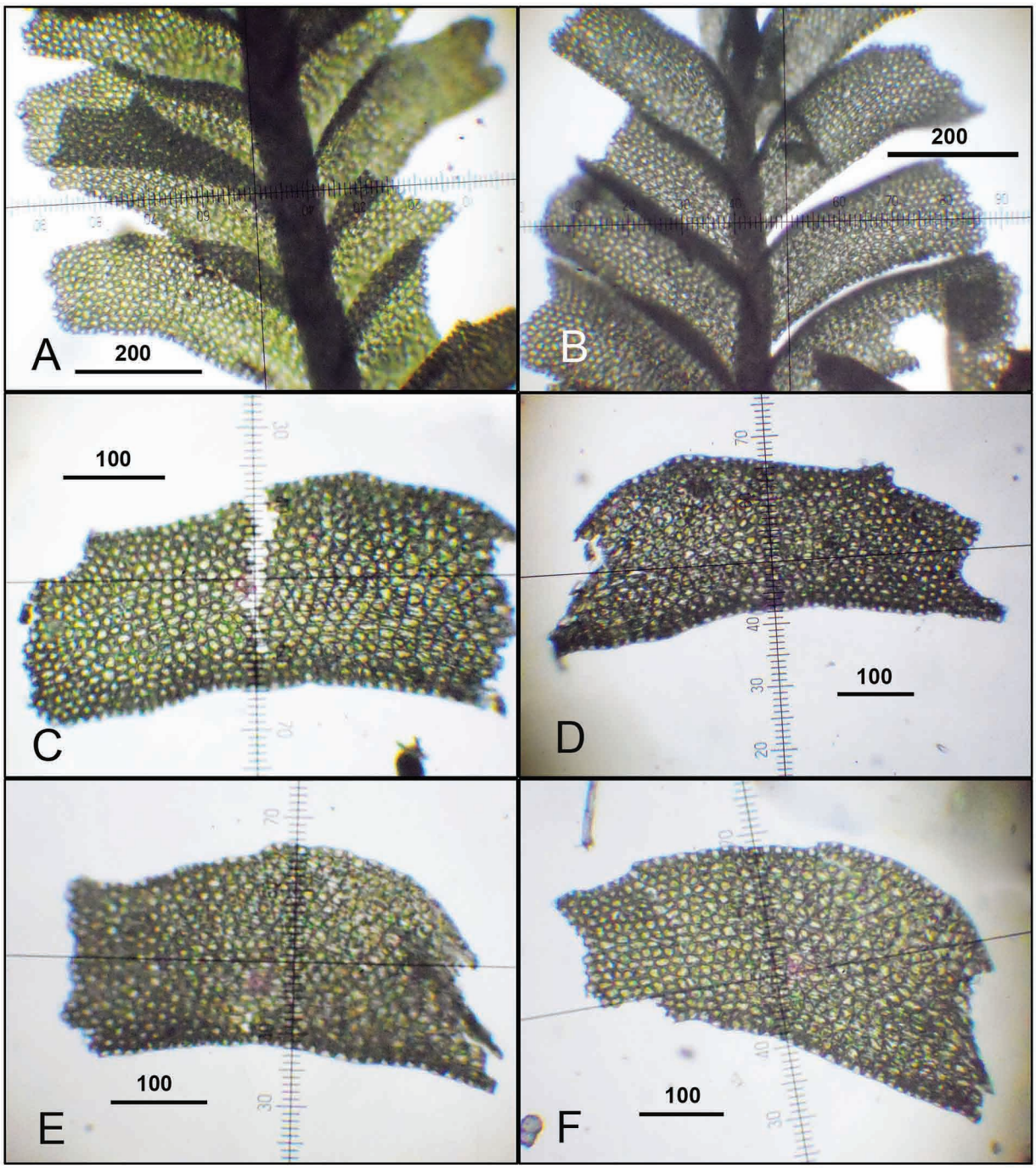

FIGURE 2. Microphotos of *Plagiochila fracta sp. nov.* from *Geissler19691/1* (holotype, G). A–B: Habit, ventral view. C–F: Leaves.

purpose of vegetative propagation, although germinating fragments were not observed. Leaf cells 5- or 6-gonal, in the margin and at apex isodiametric, of 20–32 µm diameter, in the center and at leaf base somewhat elongate, 12–16 x 20–42 µm, walls with small, at the base with larger trigones (Figs. 3 B–D). Some oil bodies are persistent, ovate, exceeding the chloroplasts in size and seem to be slightly botryoidal. Autoicous. Androecia intercalar, consisting of 3–5 pairs of male bracts with acute ends sometimes pointed outwards. Gynoecia terminal or lateral supported by 1–2 bracts with acutely dentate margin. Perianth on a short, 80–120 µm long stalk, campanulate, almost terete with two very weak folds (Fig. 1 F). Perianth mouth fimbriate, with irregular, obtuse, 4–8 cells long fringes, 2–4 cells wide at their base (Fig. 3 E–F).

Etymology:—The specific epithet "*fracta*" has the meaning "broken" in Latin.

Recognition:—In North America and Asia several *Plagiochila* species with fragmenting leaves occur, but no other African species has such ones, which already in the field are irregularly broken into parts. Although the related and very widespread *Plagiochila exigua* (Taylor 1844: 179) Taylor (1846: 264) has caducous leaves, they are acutely bilobate,

breaking away intact from their base. The doubtful *Plagiochila artsii* Pócs (2006: 334) has caducous, filamentous leaf lobes. In addition, the perianth mouth of *Plagiochila fracta* with obtuse fringes is also a good separating character distinguishing it from most African *Plagiochila* taxa.

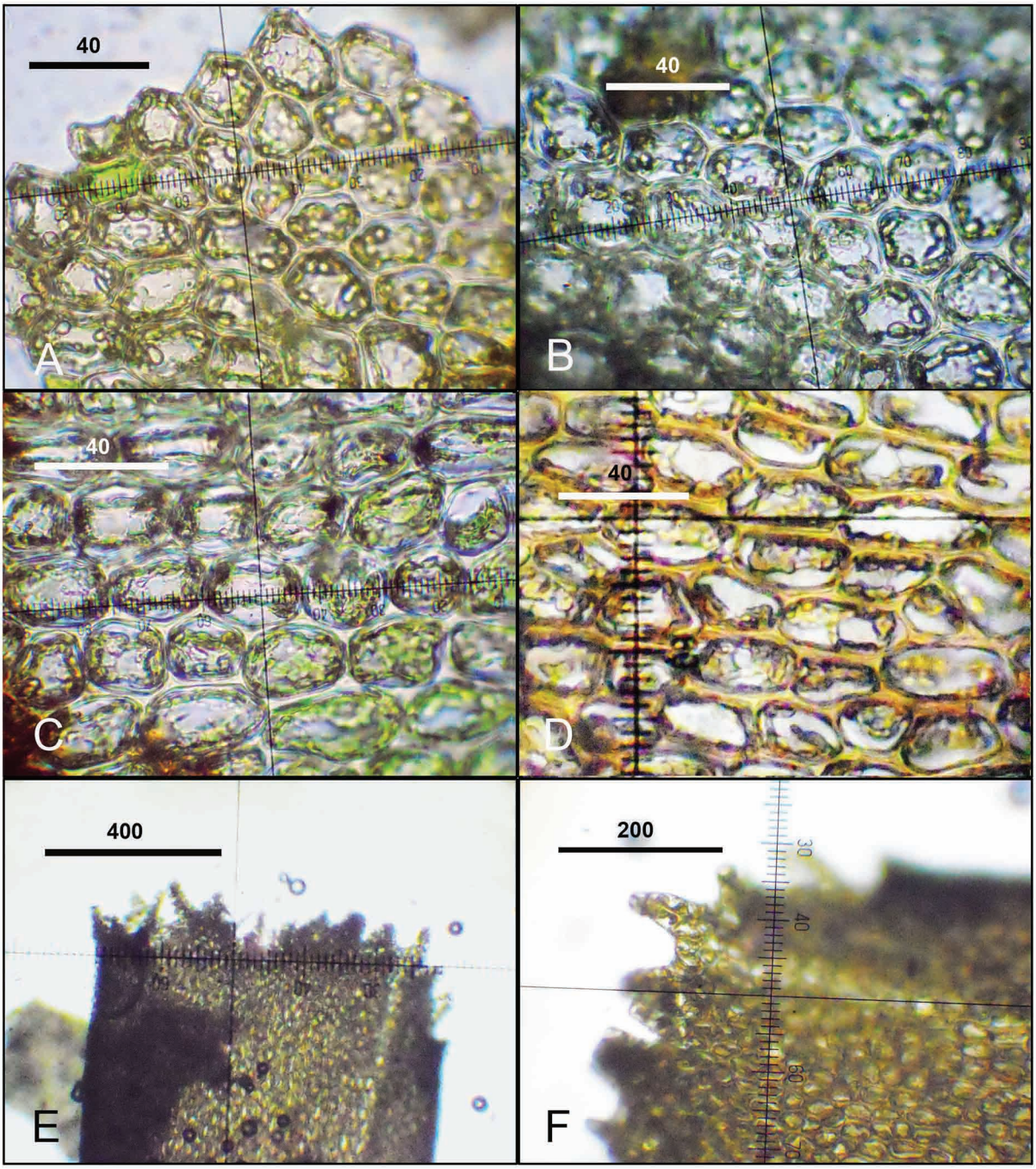

FIGURE 3. Microphotos of *Plagiochila fracta sp. nov.* from *Geissler19691/1* (holotype, G). A: Dehiscence line of a fractured leaf. B: Apical, C: media and D: basal leaf cells. E: Perianth mouth. F: Fringes of the perianth mouth.

Distribution:—The species is only known from the type. It seems to be endemic to the Manongarivo range in north-west Madagascar.

Remarks:—Several attempts were made in vain by French bryologists and by the author to again collect the above mentioned minuscule *Plagiochila artsii* on tree-fern stems at the type locality in Réunion Island. These repeated efforts suggest that the species described from small fragments, collected by the late Theo Arts, might be propagule shoots fallen off from the leaf surface of some other *Plagiochila* species.

Acknowledgements

The author is grateful to the director and staff of Geneva Herbarium for placing at his disposal the very rich Madagascar collection made by his late friend Patricia Geissler and to Anders Hagborg (F, Chicago) and Lars Söderström (NTNU, Trondheim) for the improvement of this paper.

References

Carl, H. (1931) Die Arttypen und die systematische Gliederung der Gattung *Plagiochila* Dum. [suppl.] *Annales Bryologici* 2: 1–170.

Dumortier, B.C.J. (1831) *Sylloge Jungermannidearum Europae indigenarum, earum genera et species systematicè complectens.* Tornaci Nerviorum [Tournay], typis J. Casterman, 100 pp.

Dumortier, B.C.J. (1835) *Recueil d'observations sur les Jungermanniacées.* Tournay, imprimerie de J.-A. Blanquart, 27 pp.

Heinrichs, J., Lindner, M., Gradstein, S.R., Groth, H., Buchbender, V., Solga, A. & Fischer, E. (2005) Origin and subdivision of *Plagiochila* (Jungermanniidae: Plagiochilaceae) in tropical Africa based on evidence from nuclear and chloroplast DNA sequences and morphology. *Taxon* 54: 317–333.
http://dx.doi.org/10.2307/25065360

Pócs, T. (2001) East African bryophytes, XVI. New taxa of Lejeuneoideae (Lejeuneaceae) collected by Patricia Geissler in Manongarivo Special Reserve, NW Madagascar. *Candollea* 56: 69–78.

Pócs, T. (2006) East African bryophytes, XXII. Two new species, *Plagiochila artsii* and *Plagiochila hiroshiana* (Plagiochilaceae, Marchantiophyta). *The Journal of the Hattori Botanical Laboratory* 100: 333–350.

Pócs, T. & Geissler, P. (2002) Chapteir 3. The bryophytes collected in the Réserve spéciale de Manongarivo, Madagascar. *In*: Gautier, L. & Goodman, S.M. (Eds.) Inventaire floristique et faunistique de la Réserve spéciale de Manongarivo (NW Madagascar). *Boissiera* 59: 41–76.

Pócs, T. & Váňa, J. (2002) A new species of *Amphicephalozia* (Hepaticae) from Madagascar. *Polish Botanical Journal* 46: 145–150.

Sass-Gyarmati, A. (2001) *Lopholejeunea leioptera* Gyarmati (Lejeuneaceae, subfam. Ptychanthoideae), une nouvelle espèce récoltée dans la Réserve spéciale de Manongarivo (Nord-Ouest de Madagascar). *Candollea* 56: 79–83.

Taylor, T. (1844) On two new species of *Jungermannia*, and another new to Britain. *Transactions of the Botanical Society of Edinburgh* 1: 179–181.
http://dx.doi.org/10.1080/03746604409467527

Taylor, T. (1846) New Hepaticae. *London Journal of Botany* 5: 258–284.