Revised checklist of the ferns and fern allies of Timor







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Preface

When Hermenegildo Costa first approached me about undertaking a PhD project under my supervision, he proposed studying the mangroves of Timor. Although this would have been a highly relevant subject, I encouraged him to pursue a broader study encompassing a greater diversity of plant species—one more closely aligned with my own expertise and with greater potential to contribute to our knowledge of Timor's plant diversity. This seemed particularly important given the high rate of species loss driven largely by habitat loss, pollution, climate change, and other factors.

A study of the ferns and fern allies of Timor stood out as an excellent choice, both because we were planning to publish data gathered during our expeditions to Timor-Leste in 2004 and 2005, and because we already had established contacts with Peter Hovenkamp, an internationally recognized expert on the ferns of the Malesia region at Naturalis Biodiversity Center in Leiden, The Netherlands. The supervision team was accordingly established: myself; my colleague Helena Silva, who had been Principal Investigator of the project "Contribution to the management of Timor-Leste's floristic resources" (POCTI/MGS/46905/2002); and Peter Hovenkamp.

Hermenegildo began his PhD promptly, studying our earlier collections and specimens held in other herbaria of relevance to the subject, reviewing the literature, and, of course, making his own collections in Timor-Leste. I was able to accompany him on the first of these expeditions, which also included a visit to the Bogor Herbarium in Indonesia. The work progressed steadily. Alongside his checklist, Hermenegildo prepared a guide to the ferns of Dare Forest, intended for students at the university where he teaches, as well as a study of the chemical composition of extracts of *Aglaomorpha quercifolia* (L.) Hovenkamp & S.Linds. (now a synonym of *Drynaria quercifolia* (L.) J.Sm.). He presented his first poster at the 11th Flora Malesiana Symposium, held from 30 June to 5 July 2019. Shortly afterwards, we received the sad and unexpected news of Peter Hovenkamp's death in a cave in Malaysia.

Some time later, Stuart Lindsay, then Senior Researcher at the National Parks Board, Singapore, was suggested as his replacement as the international expert on Malesian ferns. He accepted, and his revisions greatly improved the quality of the study presented here.

Given the scope and complexity of the work, several years passed between its presentation as part of Hermenegildo's thesis and the completion of its translation into English, revision, and adaptation for publication. In this regard, it is worth noting that we chose to publish the study as a book rather than as a journal article, given its length and specific format of the checklist. As a book, by contrast, the work would be more rewarding to produce and far easier to publish in its original form.

For this reason, although the study is presented here as a book, we have preserved the thesis's original organization—the classical chapters of Introduction, Materials and Methods, Results and Discussion, Conclusions, and References—with its most extensive chapter, the checklist itself, included as Appendix I. We have, however, adapted the format and added sections appropriate to a book, such as this preface.

Nonetheless, our aim was to achieve the highest possible quality, and to that end we asked two experts to review the manuscript, to whom we are most grateful. Sara Barrios, Islands Conservation Partnership Coordinator at the Royal Botanic Gardens, Kew, U.K., reviewed the extinction-risk assessments against IUCN criteria, while Daniele Cicuzza, Professor at Universiti Brunei Darussalam and lead author of the recently published *Checklist of the Ferns and Lycophytes of Brunei Darussalam*, reviewed the remaining chapters.

Aveiro, September 2026 Paulo Silveira

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- The SYNTHESYS program, which granted a stay at Naturalis Biodiversity Center (Leiden ,The Netherlands), to study the herbarium specimens and work with Peter Hovenkamp in 2017, and partially supported a stay at Museum National d'Histoire Naturelle (Paris, France) to study the collections from Timor.

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Aveiro, September 2026 The authors

Summary

The present study aimed to contribute to the knowledge of the diversity of Timor's pteridophytes and lycophytes, with particular emphasis on Timor-Leste. Drawing on extensive fieldwork across much of Timor-Leste's territory, together with the study of herbarium specimens and the literature, we compiled a database of almost 1,200 specimens, resulting in a checklist of 215 taxa. Of these, 52 represent, to the best of our knowledge, new records in the literature for Timor, while 31 misapplied names were corrected. The new fieldwork contributed with 315 (27%) additional herbarium specimens, adding to the 124 (10%) collected by Paiva, Silveira and Sousa in 2004 and 2005, all of which will be deposited in the collections of the Herbarium of the University of Aveiro (AVE), the Herbarium of the Naturalis Biodiversity Center, Leiden (L), and the future Herbarium of the University of Timor Lorosa'e. The next three most abundant collections were the 144 (12%) made by Ruma in West Timor, the 84 (7%) made by H.O. Forbes, and the 81 (7%) made by I. Cowie and colleagues of the Northern Territory Herbarium, Australia (DNA), both in Timor-Leste. Extinction risk was assessed at the global level for three endemic species, and at the regional level, for the island of Timor, for six forest species: one was assessed as CR, three as EN, three as VU, one as LC and one as DD. Future studies should extend collection efforts to the many unexplored areas of Timor, ideally gathering demographic and threat-related information to assess the conservation status of the remaining species, especially the rarer and endemic ones.



Introduction

The island of Timor is part of the Lesser Sunda Islands (LSI), located in Southeast Asia close to Australia, with an area of approximately 30,000 km^2 (Figure 1). The island is politically divided into two parts: the eastern part, under Portuguese colonial rule for 450 years, and the western part, under Dutch rule before later becoming part of the Republic of Indonesia (Figure 2). The eastern part proclaimed independence under FRETILIN (Revolutionary Front of Independent Timor-Leste/East Timor) on November 28, 1975, shortly before the 25-year Indonesian invasion and occupation. The restoration of Timor-Leste's independence was internationally recognized on May 20, 2002 (RDTL, 2002; Cardoso, 2014; Mohamedsaid, 2019).

Timor is part of the Malesia biogeographic region, one of the largest centres of tropical plant diversity (Johns, 1995). It also belongs to a smaller, but equally significant, biogeographic region for biodiversity and conservation: Wallacea (Myers *et al.*, 2000; Mohamedsaid, 2019). This region comprises Sulawesi, the Moluccas, Banda and the LSI, which include the island of Timor (Matuszak *et al.*, 2015; Mohamedsaid, 2019).

Pteridophytes are vascular plants that reproduce by spores rather than flowers or seeds. They are represented worldwide by 51 families, 337 genera and approximately 12,000 species, comprising two classes: Lycopodiopsida and Polypodiopsida. The Lycopodiopsida include three orders — Lycopodiales, Isoetales and Selaginellales — totalling 3 families, 18 genera and about 1,338 species (PPG I, 2016). The Polypodiopsida comprise four subclasses (Equisetidae, Ophioglossidae, Marattiidae and Polypodiidae), totalling 11 orders, 48 families, 319 genera and about 10,578 species. Equisetidae includes a single order, Equisetales. Ophioglossidae comprises the orders Ophioglossales and Psilotales, and Marattiidae comprises only the Marattiales. Polypodiidae, the subclass with the greatest diversity of extant ferns, includes seven orders: Cyatheales, Gleicheniales, Hymenophyllales, Osmundales, Polypodiales, Salviniales and Schizaeales. Among these, the Polypodiales are divided into six suborders: Aspleniineae, Dennstaedtiineae, Lindsaeineae, Polypodiineae, Pteridineae and Saccolomatineae (PPG I, 2016).

Pteridophytes occur in most terrestrial habitats and in some aquatic communities, contributing substantially to plant diversity on Earth. As the second largest group of vascular plants, they are a significant component of many plant communities and an

important part of the herbaceous layer in many forests (Yatskievych, 2003; Yusuf, 2010). Approximately 75% occur in the tropics, and 25% grow as epiphytes on trees (Zuquim *et al.*, 2008). They are however widely distributed, from tropical and temperate forests to arctic and alpine tundra, saline mangroves, semi-arid deserts and coastal rocks swept by salt spray (Yusuf, 2010). Most prefer humid, shady conditions, but a relatively small number are adapted to dry, sunny conditions, reducing their surface area and/or covering it with hairs or scales to limit water loss (Yusuf, 2010).

In terms of where they grow, ferns can be divided into terrestrial species, growing on open ground or the forest floor; climbers, with a long, slender rhizome that climbs the first tree it encounters; epiphytes, which grow on trees — not as parasites, but relying on their roots to gather water and nutrients, usually without harming the host; rock ferns, some on dry rocks and others on moist rocks along riverbanks; and, finally, aquatic ferns, ranging from tiny plants that float on the water's surface with roots hanging downward (Salviniaceae) to large mangrove ferns such as *Acrosticum aureum*, which can withstand partial tidal immersion, or the fern-like Marsiliaceae, with creeping rhizomes rooted in mud (Holttum, 1954).

Current knowledge of pteridophyte diversity on Timor comes largely from collections made on the earliest European botanical explorations and during the colonial period. Among the most productive collectors were Gaudichaud (1818), Zipelius (1828), Spanoghe (1831-6), Teysmann (1859/71/73), H.O. Forbes (1882-3), F. Newton (1896-7), A. O. de Castro (1909-11), Walsh-Held (1928-9), G.H.W. Stein (1932), de Voogd (1934-5), Bloembergen (1939), E. Meijer Drees (1946-57), R. Cinatti (1946-7) and van Steenis (1953-5). The Portuguese naturalist Ruy Cinatti, besides contributing his own collections, published a detailed account of the botanical explorations carried out in Timor up to 1950 (Cinatti, 1950). No significant explorations appear to have taken place in Timor-Leste during Indonesia's rule. After independence, the largest collections were made by Portuguese (e.g. Silveira et al. 2008) and Australian (e.g. Cowie, 2006) teams, from Aveiro and Palmerston, respectively.

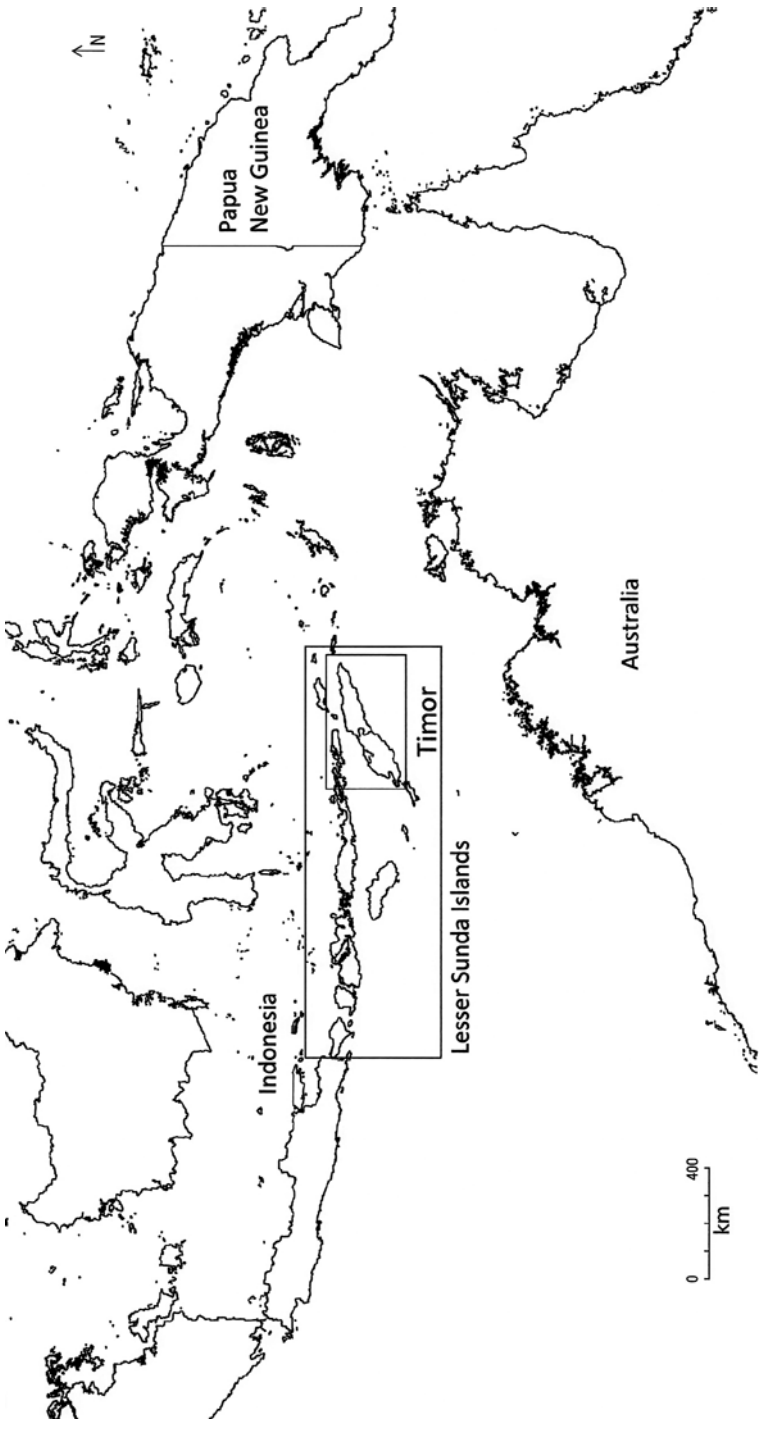


Figure 1 - Location of Timor and the Lesser Sunda Islands.

Data on Timor's Pteridophytes (ferns and fern allies) can be found in several general lists of vascular plants, as well as in works dedicated exclusively to this group. Decaisne (1834) and Forbes (1885), for example, published general lists. Among works specifically on Pteridophytes, the earliest appears to be Kuhn (1889), "Farne (Filicinae) und bärlappartige Gewächse (Lycopodinae)", which reported the results of Friedrich Carl Nauman's collections from the round-the-world expedition of the SMS Gazelle and includes references to several specimens collected in Timor. Next came "Malayan ferns. Hanbook to the determination of the ferns of the Malayan islands…" by Alderwerelt van Rosenburgh (1908), which reports data on specimens from Timor as well as other Malay islands. In 1934, Ilse Rensch (Rensch, 1934) reported further data on ferns from Timor and other Sunda Islands, building on the collections of Friedrich Carl Nauman and G. Stein. The most substantial contributions on the pteridophytes of Timor, however, were made by Posthumus (1944), who published a checklist dedicated exclusively to ferns, listing 290 *taxa* for the LSI, and by Ruma (2002), who studied the ferns of West Timor and recorded 58 *taxa*. An important regional source is series II of Flora Malesiana (e.g. Van Steenis & Holttum, 1959–1982; Nooteboom, 1998; Nooteboom et al., 2012; etc.), though this remains incomplete: while five volumes have been published, covering families such as Thelypteridaceae, the Tectaria group, Davalliaceae and Nephrolepidaceae, treatments of other important families remain unpublished, although some, such as *Pteris* L. and Aspleniaceae, are in preparation (https://floramalesiana.org/new/families-treated/). No checklist, however, has yet been published dealing with the ferns and fern allies of Timor-Leste specifically — a gap this work aims to fill.

The objective of this work was therefore to compile as complete a catalogue as possible of the Pteridophytes of Timor, with particular emphasis on Timor-Leste, based on literature records, historical herbarium specimens and recent collections made by some of the authors.

Materials and methods

Political and administrative division

The island of Timor is politically divided into two parts: West Timor, which belongs to the East Nusa Tenggara province of Indonesia, and Timor-Leste, an independent country, officially the Democratic Republic of Timor-Leste, since 2002 (Figure 2). West Timor covers approximately 16,000 km^2, while Timor-Leste covers approximately 15,000 km^2. Although this study focuses mostly on Timor-Leste, where fieldwork was conducted by some of the authors, we also included specimens and literature records from West Timor, since there are no significant ecological differences between the two areas and many older specimens are labelled only "Timor".

For West Timor, we used the older division into four regencies: Kupang, South Central Timor, North Central Timor and Belu. We did not adopt the 2012 division of the southern part of Belu into a new regency, named Malaka, as this was not yet available in some of the software utilities used, such as DIVA-GIS and the external gazetteers in BRAHMS. Timor-Leste is divided into four distinct areas: the eastern half of the island, with 14,000 km^2; the enclave of Oecussi, with 815 km^2; the island of Ataúro, with 141 km^2; and the islet of Jaco, with 11 km^2, located at the eastern end of the island (GERTiL, 2002). Administratively, it is divided into 14 municipalities (Figure 2): Aileu, Ainaro, Ataúro, Baucau, Bobonaro, Cova Lima, Dili, Ermera, Lautém, Liquiçá, Manatuto, Manufahi, Oecusse, and Viqueque (GERTiL, 2002).



Figure 2 - Political division of the island of Timor, main administrative divisions (regencies of West Timor, in light grey, and municipalities of Timor-Leste, in cream) and respective headquarters cities.

Climate

Timor's climate has been classified as wet monsoon, with a distinct dry season, following W. Okolowicz's climatic zones, with additions proposed by Martyn (1992). Timor lies within a region influenced by both the Asian and Australian monsoons: between December and February, the Asian monsoon blows from the northwest, bringing greater humidity and heat and causing the rainy season, while between April and October the Australian monsoon blows in the opposite direction, from the southeast, causing the dry season.

Vegetation

These variations in precipitation, together with temperature (lower at higher altitudes), have a substantial impact on vegetation: evergreen forest predominates in mountainous regions and along the south and east coasts, while drier vegetation, semi-evergreen forest or savanna, predominates on the north coast (Gomes, 1950; Trainor et al., 2007). Mangroves occupy relatively small areas compared with other islands in the region, owing to strong hydrodynamic forces, especially along the south coast, where watercourses do not form large estuaries. Some mangrove stands do occur, however, particularly along the calmer waters of the north coast, in inlets, bays and other sheltered zones, as at Metinaro, Hera, Manatuto, Tibar and Maubara (Gomes, 1950).

Conservation of biodiversity in Timor

The protected areas designated in West Timor and Timor-Leste, as reported by GFW (https://globalforestwatch.org/map/), are shown in Figure 3.



Figure 3 – Distribution of terrestrial and coastal protected areas (in orange) on the island of Timor (source: Global Forest Watch, https://globalforestwatch.org/map).

For a young country like Timor-Leste, the designation of protected areas is very important for safeguarding its biodiversity, geological features, and other natural assets. Based on Articles 61 and 139 of the Constitution of the Democratic Republic of Timor-Leste, which relate respectively to the environment and to natural resources, several protected areas have been designated in Timor-Leste since the country's independence.

In its national legislation on biodiversity conservation, Timor-Leste adopts the categories and types of protected area defined by the IUCN. Under Article 12 of Decree-Law No. 5/2016 (Government of Timor-Leste, 2016), the following categories were established: (1) National Park; (2) Wildlife Sanctuary; (3) Natural Monument; (4) Protected Landscape; and (5) Natural Reserve. This decree also created the National System of Protected Areas, comprising a set of terrestrial and marine protected areas of public, private or community ownership, with national, regional, municipal, local or cross-border scope. The aim is to provide broad, cross-cutting protection that can help improve the lives of local populations while contributing to the nation's sustainable development. Although several protected areas have been declared, only two have so far been

officially established through Government Resolution: the Nino Konis Santana National Park (NKSNP) and the Kay Rala Xanana Gusmão National Park (KRXGNP). The NKSNP was the first national park created in Timor-Leste, under category 5 (Natural Reserve); it was approved by Government Resolution No. 8/2007 of 1 August and officially inaugurated in August 2008. The KRXGNP was created by Government Resolution No. 38/2015 of 21 October. The NKSNP encompasses a wide range of terrestrial and marine landscapes, including extensive coral reefs as well as the largest remaining area of tropical wetland and tropical monsoon forest on the island of Timor. Its terrestrial and marine areas include a wide variety of habitats, notable for the biodiversity of their flora and fauna (Government of Timor-Leste, 2007).

Although several protected areas and national parks have been declared in Timor-Leste, dense forest cover declined by 35% between 2003 and 2012, and sparse forest cover declined by a further 2.6%. The main causes of this forest degradation were unregulated firewood cutting, uncontrolled grazing, expansion of agricultural land, and weaknesses in the institutions responsible for territorial management (Government of Timor-Leste, 2017).

Checklist elaboration and organization

This study was carried out through a review of the literature and the study of herbarium specimens (AVE, B, BM, BO, COI, DNA, E, FI, G, JE, K, L, LISC, LISU, P — abbreviations following Thiers, 2016), consulted by visiting or borrowing specimens, or through online databases (e.g. https://science.mnhn.fr/institution/mnhn/search or https://bioportal.naturalis.nl).

Another important source of information was the first author's own collections, carried out from June to September 2016, April to June 2017, November 2017 to January 2018, and November to December 2018. Collecting took place both along existing roads and on foot, through places of apparent interest representative of the different environmental conditions and plant formations found in the study area. The methods used for collecting, preparing and drying specimens followed those described in works such as Neves and Rodrigues (1957), Ingram and Lowman (1995) and Pinho et al. (2016). For each specimen, photographs were taken, and the habit, habitat and geographic coordinates were recorded. Where possible, information was also gathered from local in-

habitants on common names in local use, the corresponding language or dialect, and any medicinal or other uses. Specimens were collected with all elements necessary for identification, and the best examples were selected for a future herbarium of the Department of Biology Teaching at UNTL, for the herbarium of the Department of Biology of the University of Aveiro (AVE), with the remainder offered to other herbaria, such as the Naturalis Biodiversity Center, Leiden, Netherlands (L) and the Herbarium of the University of Coimbra (COI).

Specimens collected near Dili, or at other locations with a reliable electrical supply, were pressed and dried using the forced heated-air ventilation method (Blanco et al., 2006). Specimens collected on expeditions to areas without a reliable electrical supply, especially under conditions of high heat and humidity, were temporarily preserved using the Schweinfurth method, originally described by Schrenk (1888), in which specimens are kept temporarily in newspaper moistened with 96% alcohol. After returning to Dili, drying was completed by replacing the damp newspaper with dry newspaper and applying the forced-ventilation method described above (Blanco et al., 2006).

Specimens collected by the first author were identified for the most part in the herbarium of the Department of Biology of the University of Aveiro, using stereo and optical microscopes. Identification was also carried out in the laboratories of the Naturalis Biodiversity Center in Leiden. Several reference works were used for identification, including Flora Malesiana (Van Steenis & Holttum, 1959–1982; Kramer, 1971; Holttum, 1991; Laferriere, 1998; Hovenkamp et al., 1998; Hovenkamp and Ho, 2012; Hovenkamp & Miyamoto, 2012; Nooteboom et al., 2012), Flora of Australia (Orchard, 1998), and Flora of China (Lin et al., 2013) , and the guide "Ferns of Southern Africa. A Comprehensive Guide" (Crouch et al., 2011). Many specimens deposited in herbaria other than AVE were identified from photographs, based on the best possible assessment and/or previous identifications by specialists; these may need to be re-evaluated once the specimens themselves can be studied.

Information on each specimen — including collector, collection number, scientific name, common names in local use and the corresponding language or dialect, habit, habitat, geographic coordinates of the collection site, and any medicinal or other uses — was entered into a database using BRAHMS 7.6 software (Botanical Research and Herbarium Management System, University of Oxford, UK, https://herbaria.plants.ox-

.ac.uk/bol/). This facilitated several tasks, including the printing of herbarium labels, the preparation of the checklist, and the analysis of species' biodiversity and geographic distribution.

In the checklist (Appendix I), taxa are presented in alphabetical order by family, then by genus and species, following the classification adopted by PPG I (2016). An asterisk ("*") before a name indicates a new record for Timor. Nomenclature follows World Plants (Complete List) (Hassler, –2020). Author abbreviations, as well as literature citations, follow the International Plant Names Index (IPNI) (www.ipni.org). Previous records were compiled from Carruthers (*in* Forbes et al., 1885), Kuhn (1889), Alderwerelt van Rosenburgh (1908), Rensch (1934), and Flora Malesiana (Hennipman, 1978; Holttum, 1959, 1978, 1981, 1991; Hovenkamp et al., 1998; Hovenkamp & Ho, 2012; Hovenkamp & Miyamoto, 2012; Kramer, 1971; Laferriere, 1998; Nooteboom, 1998; Nooteboom et al., 2012). The information given under "Ecology" was compiled from the labels of herbarium specimens; where this information was not available on the specimen itself, ecological data reported in the literature are given instead, drawn mostly from Posthumus (1944), Ferns of Thailand, Laos and Cambodia (Lindsay & Middleton, 2012), the online Flora of China (eFloras, 2008), Flora of Australia (Orchard, 1998), Cicuzza et al. (2025), or other sources as stated. The "Distribution" given for each taxon results from the interpretation of information available through GBIF (www.gbif.org), Ferns of Thailand, Laos and Cambodia (Lindsay & Middleton, 2012), World Plants (Complete List) (Hassler, –2020) and the online Flora of China (eFloras, 2008). Where possible, specimens lacking geographic coordinates were georeferenced using data available through GeoNames (https://www.geonames.org), choosing the location that most closely matched the recorded collection site. This inferred location, together with its coordinates, is given in square brackets, while the original description of the collection site is given in braces. Illustrative photographs of the pteridophytes of Timor, where available, are cited after the corresponding taxon in the checklist and presented in Appendix II.

Maps elaboration

All maps were produced using DIVA-GIS software, v. 7.5 (http://www.diva-gis.org). To generate the map of species richness, the "Analysis/Point to Grid" tool of this software was used, with a grid size of 0.1 × 0.1° (approximately 11 km).

Extinction risk assessment

Extinction risk was assessed following the IUCN criteria (IUCN, 2012a; IUCN Standards and Petitions Committee, 2024). These criteria were applied only to species endemic to Timor, at the global level, and, at the regional level, for the island of Timor, to a selection of forest-habitat species — the only ones for which decline can be inferred from the available data, given the ongoing reduction of forest area in Timor (Government of Timor-Leste, 2017; www.globalforestwatch.org). Conversely, any risk of forest habitat loss within protected areas was considered negligible, and this was taken into account when estimating the number of locations for application of criteria B and D. For these assessments, the geographic coordinates of specimens that could be georeferenced from BRAHMS were entered into the GeoCAT application (http://geocat.kew.org/), which was used to calculate the Extent of Occurrence (EOO) and the Area of Occupancy (AOO), together with the corresponding threat category (Bachman et al., 2011). The distribution map produced by this application was then superimposed on the map in Figure 3, which shows protected areas, to determine which subpopulations fall within protected areas and which lie outside them and, thereby, estimate the number of threat-bearing locations. Each of the IUCN criteria, A to E (IUCN, 2012a; IUCN Standards and Petitions Committee, 2024), was applied where possible, leading to a preliminary assessment, followed by an assessment at the regional level, drawing on the IUCN's guidelines for regional and national assessments (IUCN, 2012b) as well as the distribution map available for each species on GBIF (https://www.gbif.org/). For this regional assessment, it was taken into account that, as reported by several authors (e.g. Tryon, 1970; Smith, 1972; Olsen et al., 2020), ferns have a strong capacity for long-distance dispersal. However, it was also assumed that, given the general decline of forests on the islands neighbouring Timor, this capacity for rarer species to reach Timorese territory may be reduced.

Results and discussion

Collections and diversity

Fieldwork, together with research on specimens held in international herbaria and records in the literature, yielded a checklist of 27 families, 89 genus, 215 specific or in-

fraspecific taxa, of which 52 represent, as far as we could confirm, new literature records to Timor (Table 1, Appendices I and II). Both the number of specimens studied (1149) and the overall floristic diversity recorded here are considerably higher than those reported by Ruma (2002) for West Timor and by Posthumus (1944) for the whole island. Ruma (2002) reported 58 taxa, while Posthumus (1944) reported 107 taxa. Of the 52 new records for Timor, 39 come from recent collections made after 2001, while 19 come from older collections not previously reported in the literature. The latter include five taxa recently rediscovered and three new taxa resulting from identification corrections.

The five taxa from earlier collections that have recently been re-observed are: *Helminthostachys zeylanica*, collected by Kooy in Atambua in 1970 and, more recently, by Cowie in Lospalos in 2005 and Santana in Tutuala in 2006; *Palhinhaea cernua*, collected by Forbes in Fatunaba (Díli) in 1883, by Van Steenis in Besilau (Aileu) in 1954, and, recently, by Paiva et al. in Aileu in 2005, Cowie in Remexio (Aileu) in 2006, and Costa et al. in Seloi kraik (Aileu) and Maubisse (Ainaro) in 2016 and 2017; *Phlegmariurus phlegmaria*, collected by Bloembergen in the Nasimetan forest (Kapan) in 1939, by Walsh in Soe (n.d.), and, recently, by Trainor in Lautém in 2005 and by Cowie, Santana and Costa et al. in Ataúro in 2015 and 2016; *Psilotum nudum*, collected by Bloembergen in Bioba (Kupang) in 1939, and, recently, by Cowie in Lautém and Pinto in Viqueque in 2005 and 2006, and by Costa et al. in Viqueque in 2017; and, finally, *Tectaria membranacea*, collected by Kooy in Niki-Niki in 1967 and, recently, by Cowie in Wailili (Baucau) in 2006.

Table 1 - New records of pteridophyte species for Timor.

Family	**Taxon**
Aspleniaceae	*Asplenium exiguum Bedd*
	Asplenium laserpitiifolium Lam.
	Asplenium persicifolium J. Sm.
	Asplenium salignum Blume
	Asplenium tenerum G. Forst.
Athyriaceae	*Deparia petersenii* (Kunze) M.Kato
Blechnaceae	*Parablechnum vestitum* (Blume) Gasper & Salino
Davalliaceae	*Davallia embolostegia Copel.*
	Davallia pentaphylla Blume
	Davallia viscidula Mett. Kuhn

Family	Taxon
Dennstaedtiaceae	*Hypolepis punctata (Thunb. ex Murray) Mett. ex Kuhn*
	Pteridium revolutum (Blume) Nakai,
Dryopteridaceae	*Arachniodes amabilis (Blume) Tindale*
	Bolbitis quoyana (Gaud.) Ching
	Bolbitis repanda (Blume) Schott
	Dryopteris hirtipes (Blume) Kuntze
	Lastreopsis tenera (R. Br.) Tindale
	Pleocnemia irregularis (C.Presl) Holttum
	Polystichum mucronifolium (Blume) B.K.Nayar & S.Kaur
Lindsaeaceae	*Lindsaea cultrata (Willd.) Sw.*
Lycopodiaceae	*Palhinhaea cernua* (L.) Vasc. & Franco
	Phlegmariurus phlegmaria (L.) Holub
	Phlegmariurus squarrosus (G.Forst.) Á.Löve & D.Löve
Marattiaceae	*Angiopteris evecta (G.Forst.) Hoffm*
Marsileaceae	*Marsilea minuta L*
Ophioglossaceae	*Helminthostachys zeylanica (L.) Hook*
Polypodiaceae	*Goniophlebium pseudoconnatum (Copel.) Copel.*
	Loxogramme scolopendrioides (Gaudich.) C.V.Morton
Psilotaceae	*Psilotum nudum* (L.) P.Beauv
Pteridaceae	*Adiantum zollingeri Mett*
	Antrophyum callifolium Blume
	Antrophyum plantagineum Kaulf
	Antrophyum semicostatum Blume
	Cheilanthes brownii (Kuhn) Domin
	Cheilanthes distans (R. Br.) Mett.
	Haplopteris flexuosa (Sw.) E. H. Crane
	Pityrogramma calomelanos (L.) Link
	Pteris asperula J.Sm.
	Pteris biaurita L.
	Pteris oppositipinnata Fée
	Pteris moluccana Blume
	Pteris orientalis Alderw
	Pteris tripartita Sw

Family	Taxon
Selaginellaceae	*Selaginella ciliaris (Retz.) Spring*
	Selaginella rothertii Alderw.
	Selaginella willdenowii (Desv.) Baker
Tectariaceae	*Tectaria crenata Cav.*
	Tectaria membranacea (Hook.) Fraser-Jenk. *& Kholia*
	Tectaria melanocaulos (Blume) Copel
	Tectaria teysmanniana (Baker) S.Y.Dong
Thelypteridaceae	*Chingia imponens (Ces.) Holttum*
	Sphaerostephanos hirsutus var. *celebicus* Holttum

The three new taxa resulting from identification corrections are *Deparia petersenii*, previously misidentified as *Asplenium japonicum* Thunb. or *Diplazium japonicum* (Thunb.) Bedd.; *Marsilea minuta*, previously treated as *M. crenata* C.Presl or *M. crenata* var. *timorensis* Alderw.; and *Pteris biaurita*, previously misidentified as *Pteris nemoralis* Willd., *Pteris pyrophylla* Blume or *Pteris quadriaurita* Retz.

Thirty-one misapplied names were also identified and corrected, most to taxa already recorded from Timor. In some cases this reduced the total number of taxa — for example, *Pteris nemoralis*, *Pteris pyrophylla*, and *Pteris quadriauritita* were all found to be simply *Pteris biaurita*. As a result of these corrections, the original 31 taxa were reduced to 24 (Table 2).

The newly collected taxa include specimens gathered by the Portuguese Aveiro team in 2004/5, by Australian collectors since 2005, and by the first author of this study, H.R. Costa, from 2016 onward.

In 2005, Paiva *et al*. collected *Cheilanthes distans* on the way from Ainaro to the top of Ramelau, *Dryopteris hirtipes* in Maubisse-Hato Builico, *Halopteris flexuosa* on Monte Mundo Perdido (Viqueque), and *Hypolepis punctata* on Monte Mahubo, beyond the former town of Ermera.

Taxa collected by the Portuguese team in 2004/5 (Paiva et al.) and again by Costa et al. after 2016 include *Antrophyum semicostatum*, collected in the Laritame forest in 2005 and 2016; *Arachniodes amabilis*, collected near the Mauhobo forest (Ermera) in 2005 and

in Asumau (Aileu) and the Manucoco forest (Ataúro) in 2016; *Davallia pentaphylla*, collected near Mount Laritame in 2005 and in the Manucoco forest (Ataúro) in 2016; and *Selaginella willdenowii*, collected in Ainaro in 2004 and in Luihuno (Viqueque) in 2005 and 2017.

Table 2 – List of misapplied names and respective new names.

Misapplied name	**New name**
Acrosticum spicatum	*Lepisorus mucronatus*
Aspidium aculeatum	*Polystichum biaristatum*
Aspidium coriaceum	*Rumohra adiantiformis*
Asplenium diaphanum	*Asplenium erectum*
Asplenium japonicum	*Deparia petersenii*
Asplenium lunulatum	*Asplenium erectum*
Asplenium macrophyllum	*Asplenium simile*
Cheilanthes farinosa	*Aleuritopteris anceps*
Diplazium japonicum	*Deparia petersenii*
Dryopteris subpubescens	*Amblovenatum opulentum*
Gleichenia dichotoma	*Dicranopteris linearis*
Gymnogramma involuta	*Loxogramme prominens*
Hymenophyllum dilatatum	*Onychium japonicum*
Hymenophyllum junghuhnii	*Onychium japonicum*
Lindsaea decomposita	*Lindsaea obtusa*
Marsilea crenata	*Marsilea minuta*
Marsilea crenata var. timorensis	*Marsilea minuta*
Nephrodium pteroides	*Amblovenatum terminans*
Nephrolepis acuta	*Nephrolepis brownii*
Nephrolepis hirsutula	*Nephrolepis brownii*
Onychium lucidum	*Onychium japonicum*
Pellaea geraniifolia	*Doryopteris concolor*
Pellaea paradoxa	*Pellaea timorensis*
Platycerium alcicorne	*Platycerium bifurcatum subsp. willinckii*
Pteris longifolia	*Pteris vittata*
Pteris nemoralis	*Pteris biaurita*
Pteris pyrophylla	*Pteris biaurita*
Pteris quadriaurita	*Pteris biaurita*
Selaginella inaequalifolia	*Selaginella plana*

Cowie et al. collected several taxa not found by other collectors, including *Asplenium salignum* in Legumau (Lautém) in 2005; *Bolbitis quoyanna* on Monte Paixau (Lautém) in 2006 and Monte Manucoco (Ataúro) in 2015; *Hymenophyllum polyanthos* in Mundo Perdido (Viqueque) in 2006; *Loxogramme scolopendrioides* in Legumau (Lautém) in 2005; *Pleocnemia irregulares* on Monte Paixau in 2006; *Pteris orientalis* in Ataúro in 2015; *Pteridium revolutum* in Aileu; and *Pteris tripartita* in Malahara (Lautém) in 2006.

Similarly, *Pinto & Trainor* and Costa *et al*. collected *Angiopteris evecta* in Mundo Perdido (Viqueque) and Remexio (Aileu) in 2006 and 2017, respectively, *Phlegmariurus squarrosus* in Mundo Perdido and Viqueque in 2006 and 2016, respectively, and *Tectaria melanocaulos* in Mundo Perdido (Viqueque) and at two localities (Aileu and Dili) in 2006 and 2017, respectively.

Taxa collected by both Cowie *et al*. and Costa *et al*. include *Antrophyum callifolium*, in Monte Paixau (Lautém) in 2006, in the Manucoco forest (Ataúro) in 2015 and 2016, and in Waibua (Viqueque) in 2017; *Asplenium laserpitiifolium*, in Monte de Paixau (Lautém) in 2006, in the Manucoco forest (Ataúro) in 2015 and 2016, and in Dauboruba'a (Viqueque) in 2016; *Asplenium tenerum*, in the Manucoco forest (Ataúro) in 2015 and 2016; and *Pityrogramma calomelanos*, in Aileu in 2006 and 2016, in Ataúro, Ermera and Liquiçá in 2016, and in Maubisse in 2017.

Taxa collected only recently, by Costa et al., include *Asplenium persicifolium*, collected in the Manucoco forest and in Laritame in 2016; *Bolbitis repanda*, collected in the Manucoco forest (Ataúro) and in Ermera in 2016; *Chingia imponens*, collected on the roadside from Maubisse to Turiscai in 2017; *Davallia embolostegia*, collected in the Waidede forest (Baucau); *Davallia viscidula* and *Goniophlebium pseudoconnatum*, both collected on the roadside from Aileu to Maubisse; *Lastreopsis tenera*, collected in the Manucoco forest (Ataúro) in 2016; *Lindsaea cultrata*, collected in Asumau (Aileu) in 2016; *Pteris asperula*, collected in the Laritame forest in 2017; *Pteris oppositipinnata*, in Mane hat (Manatuto); and *Sphaerostephanos hirsutus* var. *celebicus*, collected in Corluli (Bobonaro) in 2016 and in Buklelu (Aileu) and Maubisse in 2017.

Slightly less than half (42%) of the specimens studied here were collected by various European collectors during the colonial period, while slightly more (58%) are recent collections, made after 2001 by Ruma in West Timor and, following the independence

of Timor-Leste (2002), by the first author himself (Costa et al.) and by Portuguese (Paiva, Silveira, and Sousa) and Australian (Cowie, Pinto, etc) teams. The first author's specimens are the most abundant, with 315 specimens (27% of the total), followed by Ruma's 144 (12%), the Aveiro team's 124 (10%), Forbes's 84 (7%), and Cowie's 81 (7%). Specimens with no collector identification make up 5%, followed by Naumann's collections (3%), Bloembergen's and Pinto's (2% each), and the remaining 25% comprising minor collections of 1% or less each (Figure 4).

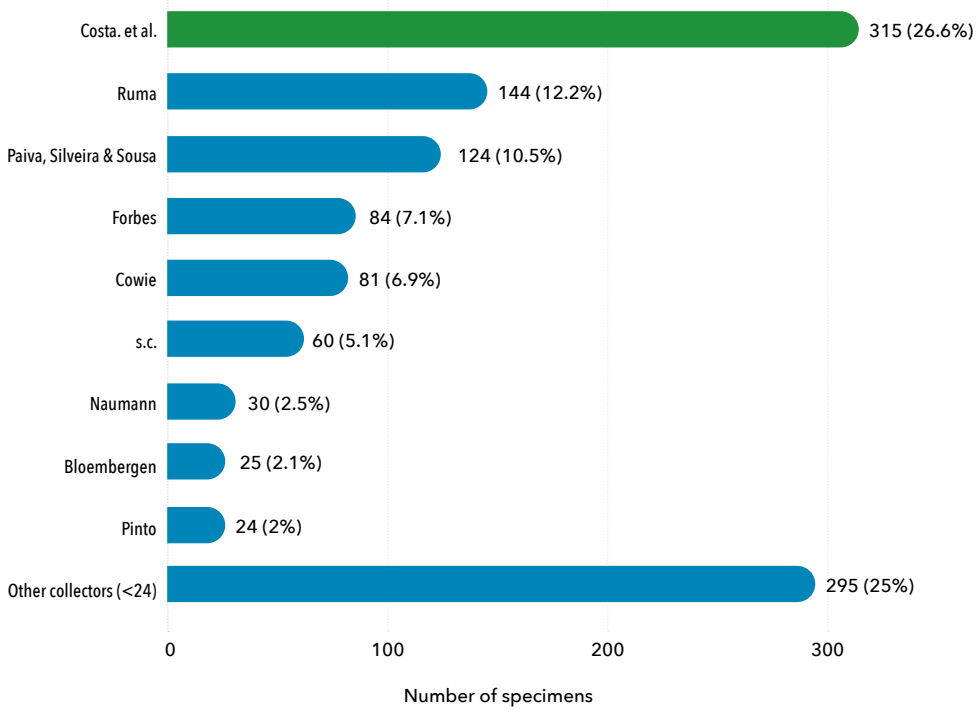


Figure 4 - Number and percentage of pteridophyte specimens collected by each collector in Timor.

The largest share of specimens, 37%, is held in the National Herbarium of the Netherlands, Leiden (L), followed by the Herbarium of the University of Aveiro, Portugal (AVE), and the Herbarium of Bogor, Indonesia (BO), with 24% and 12% of specimens, respectively (Figure 5). Other substantial collections are held at the Northern Territory Herbarium, Palmerston, Australia (DNA), the Herbarium of the University of Coimbra, Portugal (COI),

and the Natural History Museum of London, UK (BM), with 7%, 6%, and 4%, respectively. The remaining 10% is distributed across the herbaria of the Museum and Botanical Garden of Berlin, Germany (B), the National Museum of Natural History in Paris, France (P), the Institute for Tropical Scientific Research, Lisbon, Portugal (LISC, now integrated in LISU), the Royal Botanic Gardens, Kew, UK (K), and the National Museum of Natural History and Science in Lisbon, Portugal (LISU) (Figure 5). In total, European herbaria hold approximately 81% of the specimens, with the remaining approximately 19% deposited in two herbaria outside Europe, in Indonesia (Bogor) and Australia (Palmerston), with approximately 12% and 7%, respectively. Duplicates of the 315 collections prepared as part of this study were left at the National University of Timor Lorosa'e (UNTL), Dili, Timor-Leste, with a view to establishing a herbarium for this university in Dili. It is also hoped that once this herbarium is properly installed, equipped, and staffed with responsible personnel to ensure its proper maintenance and use, duplicates of the collection made by the University of Aveiro team during the 2004 and 2005 expeditions will be sent there. Making these specimens available in Timor-Leste could be an important contribution to the training of Timorese students and teachers and to advancing local knowledge of the plant diversity of this young country. Depositing duplicates of these specimens in European herbaria, such as those in Aveiro and Leiden, meanwhile, offers greater assurance of their long-term preservation and of their availability for study by specialists, supporting the advancement of knowledge. Indeed, it is common practice for collectors to deposit duplicates of their specimens across several herbaria, reducing the risk of total loss to catastrophes or other chance events, such as the fire that destroyed most of the collections of the herbarium of the Berlin Museum and Botanical Garden (B) in 1943 (Thiers, 2016). Deposition of data and images of the AVE herbarium specimens at GBIF is also planned.

The oldest collections identified were made in 1803 by R. Brown (1773-1858) while visiting Kupang (West Timor) aboard HMS Investigator; these are deposited at BM. Regarding older collections, it should be noted that approximately 90 specimens cited by earlier authors, such as Rensch (1934) and Posthumus (1944), could not be located. Some specimens cited in the literature may be missing because they were misfiled within their respective herbaria, were on loan, or were lost or destroyed. In particular, 20 specimens by Naumann and 17 by Stein cited in the literature were not initially found. However, after contacting the herbarium of the Berlin Museum and Botanical Garden, approximately 18 specimens of pteridophytes collected in West Timor by Naumann were located, though none by Stein.

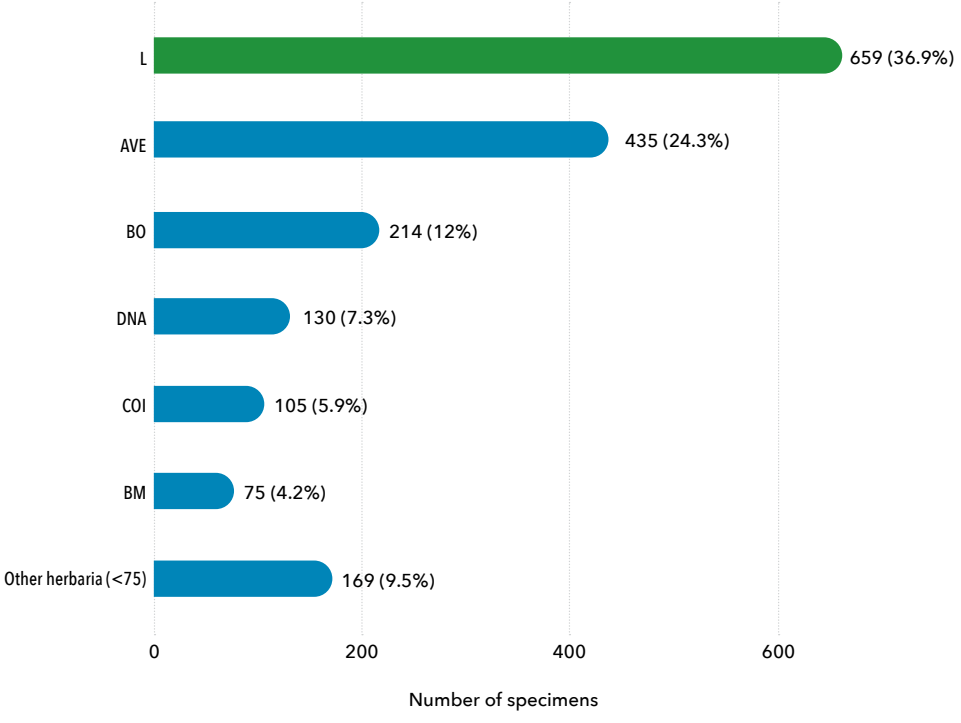


Figure 5 - Number and percentage of pteridophyte specimens from Timor deposited in each herbarium.

In terms of diversity, the most represented families were Pteridaceae, with 43 taxa (20%), followed by Polypodiaceae with 31 taxa (14%), Thelypteridaceae with 26 taxa (12%), Aspleniaceae and Dryopteridaceae with 16 taxa each (8% each), Davalliaceae with 8 taxa (4%), Athyriaceae and Dennstaedtiaceae with 7 taxa each (3% each), and a further 81 families with fewer than 7 taxa each, together accounting for 23% of the total (Figure 6). Direct comparison with the literature is not straightforward, mainly because the classification of Pteridophytes into families has changed considerably; nonetheless, Magtoto and Austria (2017), for example, also recorded a greater abundance of Pteridaceae, followed by Polypodiaceae, for Adams, in northern Luzon, Philippines.

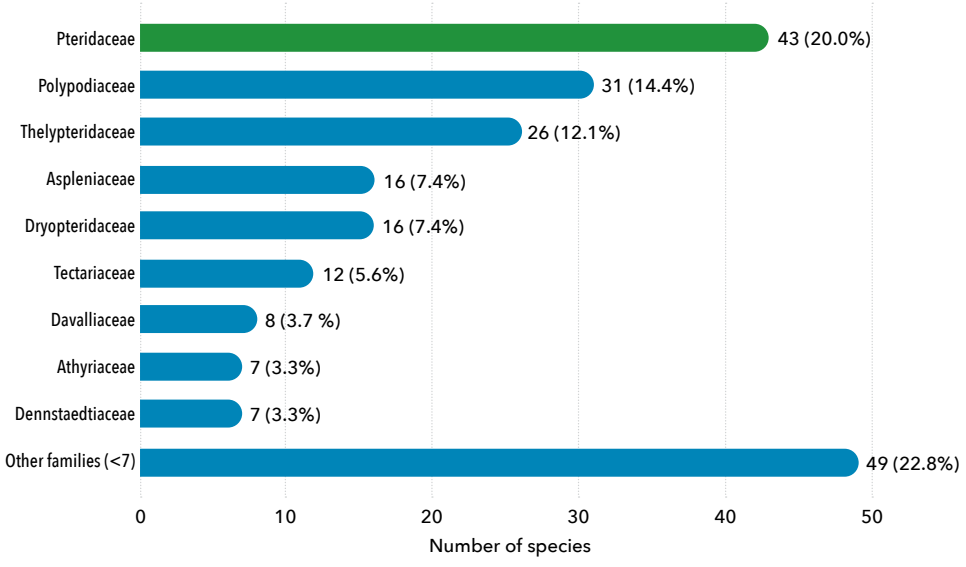


Figure 6 - Percentage of pteridophyte taxa, by family, recorded in Timor.

It is worth noting that, although the present data show a correspondence between the families with the highest numbers of taxa and specimens, from Pteridaceae to Aspleniaceae, this pattern does not hold for Dryopteridaceae and Athyriaceae. These families rank next in terms of number of taxa, but have fewer specimens than Tectariaceae and Davalliaceae.

The most abundant genus was *Asplenium*, with 16 taxa, corresponding to 8% of the total. Next were *Pteris* with 13 taxa (6%), *Tectaria* with 11 taxa (5%), *Adiantum* and *Davallia* with 4% each, and *Pyrrosia*, *Sphaerostephanos* and *Christella* with 3% each, with *Selaginella* last at 2% (Figure 7). The remaining genera, each with fewer than five taxa, together account for the majority of the diversity of pteridophytes of Timor, with 133 taxa, 62% of the total.

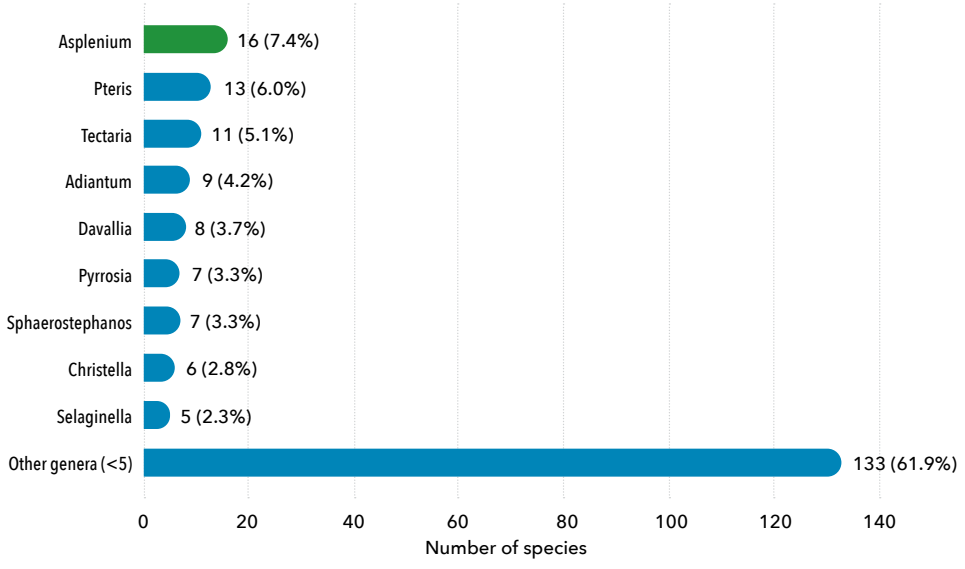


Figure 7 - Number and percentage of pteridophyte taxa, by genus, recorded in Timor.

Life forms

The Pteridophytes occurring in the study area were categorized into four growth forms (Akinsoji et al., 2016; Magtoto & Austria, 2017), based on their growth habits and the habitats they occupy: terrestrial, epiphytic, rock ferns, and aquatic (Figure 8). The majority, 142 (66%), are terrestrial, 56 (26%) are epiphytic, 14 (7%) are rock ferns, and 3 (1%) are aquatic. Among the most abundant pteridophyte families in Timor, Pteridaceae are predominantly terrestrial or, at times, grow on rocks, reflecting the characteristics of its most abundant genera, *Pteris* and *Adiantum* (Liao et al., 2013; Lin et al., 2013). Polypodiaceae, by contrast, are mostly epiphytes, contributing more to the overall abundance of this growth form (Hovenkamp et al., 1998). In other abundant families, however, terrestrial forms again predominate, as in the Thelypteridaceae (Holttum, 1981), or in the genus *Tectaria* — the most diverse genus of Tectariaceae in Timor — in which almost all species are terrestrial and found in forests, with some growing on rocks and only a few of those on limestone specifically (Holttum, 1991). In the family Blechnaceae, most species are terrestrial or rock-dwelling, and only rarely epiphytic (Nooteboom et al., 2012). The Davalliaceae are mostly epiphytic or grow over rocks, and rarely terrestrial (Nooteboom, 1998). The only pteridophytes found here as small aquatic plants, growing in shallow wa-

ter or on the margins of lagoons, belong to the Marsileaceae (Lin and Johnson, 2013). The only other aquatic example is *Ceratopteris* (Pteridaceae), which includes annual, succulent, and aquatic plants (Lin & Masuyama, 2013).

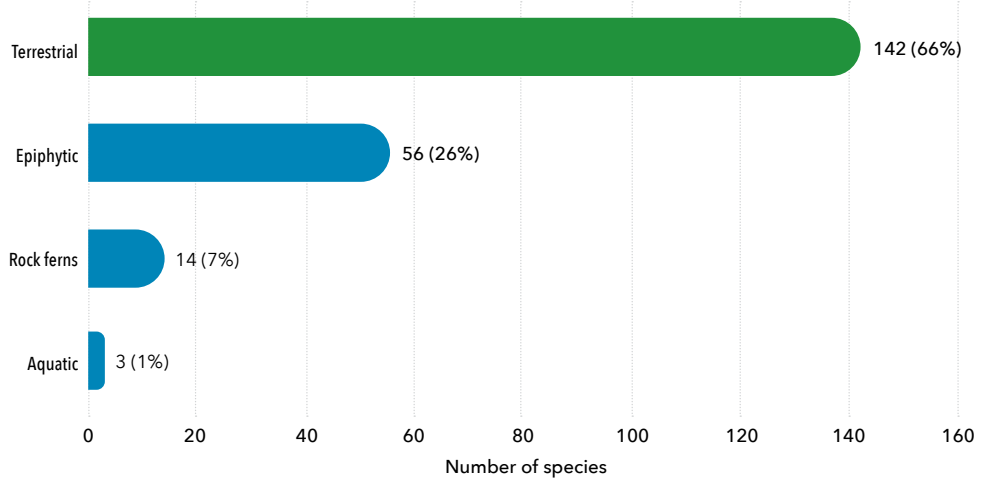


Figure 8 - Number and percentage of each growth form of the Pteridophytes of Timor.

Diversity as a function of altitude

Figure 9 represents the variation in the number of specimens and the number of taxa (species and subspecies) of pteridophytes collected in Timor, as a function of altitude, divided into classes of 300 m each. The number of specimens lacking altitude data is relatively low (137), constituting only 12% of a total of 1118. In general, both the number of specimens collected and the number of taxa are higher at low and medium altitudes (<1500 m) than at higher altitudes (>1500 m). However, the peak number of specimens is reached in the 300-599 m class, while maximum diversity is reached in the 1200-1500 m class. This is consistent with Grytnes and Beaman (2006), who report a maximum fern diversity between 1200-1500 m on Mount Kinabalu, and similar results reported by other authors for areas in the Neotropics.

Although this representation of pteridophyte species diversity in Timor, by altitude, is not based on a strictly standardized sampling effort across all altitude ranges, the results suggest that this is indeed the altitude class of greatest diversity for these plants,

since the range with the greatest number of specimens collected does not coincide with the range of greatest diversity.

It is not surprising that fewer specimens were collected, and less diversity observed, at higher altitudes (1800-3000 m): these areas are less extensive relative to the entire territory, more difficult to access, and present more limiting environmental conditions for the development of pteridophytes, such as lower temperatures and stronger winds.

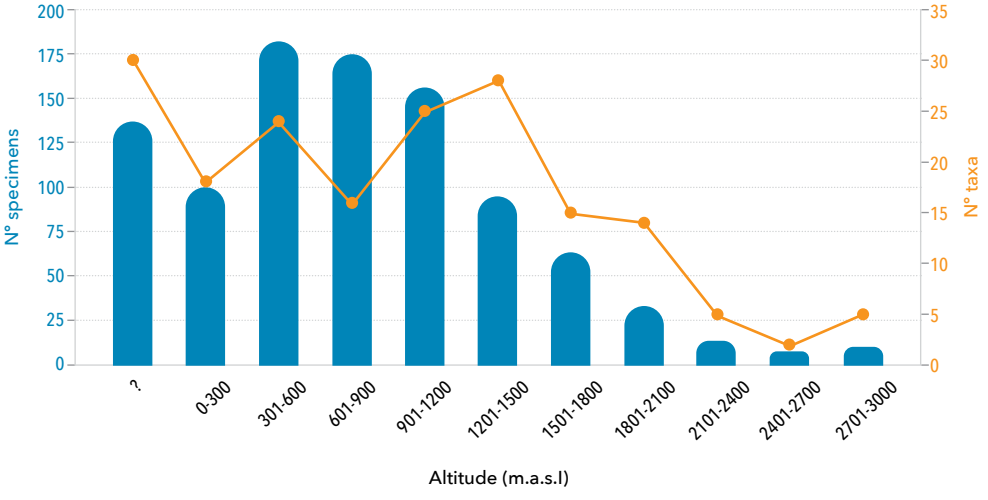


Figure 9 - Distribution of the number of specimens and number of taxa, according to altitude, of the Pteridophytes from Timor.

Spatial distribution of collections and specific richness

From the analysis of the distribution of georeferenced collections, or those that could be georeferenced, on the island of Timor, including Ataúro (Figure 10 A), we can see that these were evenly distributed across most of the island, from west to east, except for the Oecussi enclave and Jaco Island. However, the density and abundance of collection points is higher in Timor-Leste than in West Timor (Indonesia).

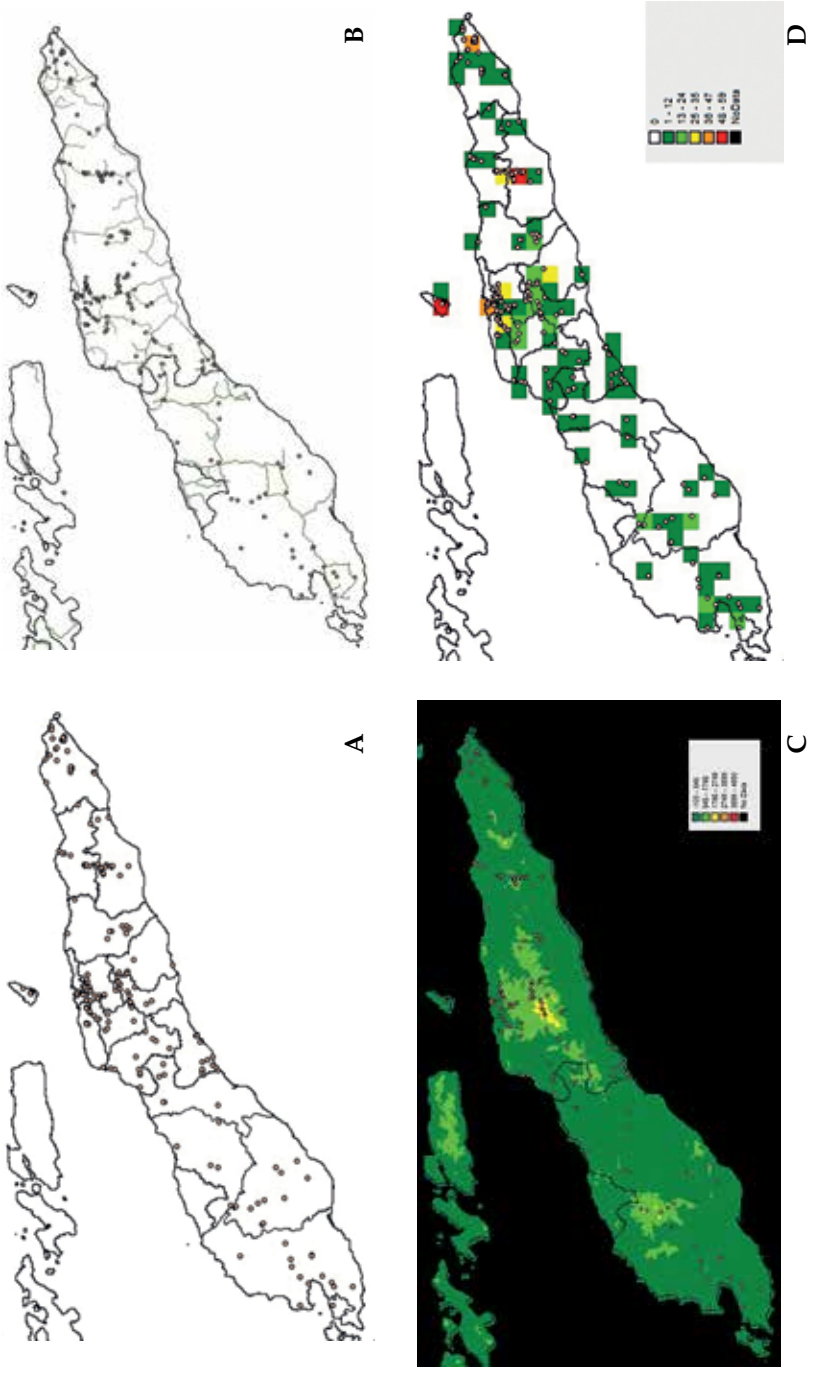


Figure 10 - Geographic distribution of pteridophyte specimen collection points in Timor: A. by administrative area; B. compared to the location of main roads; C. in relation to altitude; D. with simultaneous representation of the number of species per 0.1 x 0.1° grid.

The distribution of collection points in Figure 10 B shows that many of the collections were made along main roads — unsurprising, given the ease of access to these areas compared with the difficulty of reaching much of the rest of the territory. However, the author also sought to include paths away from the roads in his sampling, penetrating the forests, and other collectors have done the same, such as Van Steenis and Ian Cowie.

Figure 10 C shows a greater quantity of collections in areas of low to medium altitude, except for Mundo Perdido and Ramelau.

Finally, Figure 10 D shows that the points with the greatest richness of Pteridophyte species (from 36 to 59 species per grid) occur on Mount Manucoco, in the administrative post of Ataúro, on Mount Mundo Perdido (administrative post of Ossú), on Mount Paixau (municipality of Lautém), and in Dili.

Although these are sites where high diversity might be expected given their well-preserved vegetation, such as Mount Mundo Perdido, they are, in fact, sites that have been the subject of more detailed floristic studies, such as that conducted by the author of this study in Dare, Dili (Costa, Silva & Silveira, 2023), or the project conducted by an Australian team on Mount Paixau (Cowie, 2006). Other sites of intermediate richness, with 13 to 35 species per grid, were Venilale (municipality of Baucau), Soibada (municipality of Manatuto), Ainaro, Ermera, Liquiçá, and some sites in West Timor, such as Mount Mutis and Kupang. Grids with 1 to 12 species each are spread across almost the entire territory of Timor, though large areas remain uncollected in both East and West Timor. Beyond the desirability of achieving a better spatial distribution of collections across the island in future — including the Oecussi enclave and the islands of Ataúro and Jaco — the overall number of collections should also be increased, since, by Cowie's (2006) estimate, we remain far short of the 100 specimens per km^2 that Whitten et al. (1987) consider the minimum for an adequate study of the flora of islands in the Malesian region.

Extinction risk assessment

The risk assessments were carried out at a global level for three endemic species and at a regional level for six forest species occurring on the island of Timor.

Endemic species

Christella timorensis Holttum

This species was previously known only from the type specimen from West Timor. In this study, it was collected at four additional sites in Timor-Leste. Although not a strict forest specialist, it does occur in forest habitats, which are in decline, so its populations are assumed to be experiencing some decline as well. The EOO and AOO were calculated at 8,563 km^2 and 20 km^2, respectively, as shown in Figure 11.

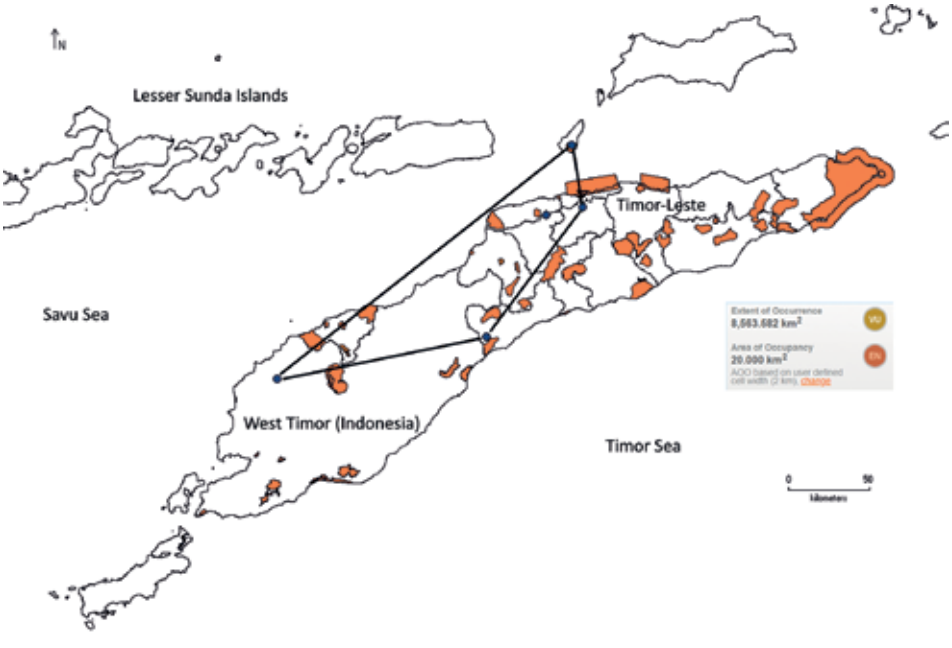


Figure 11 – Overlap of *Christella timorensis* subpopulations with the boundaries of protected areas (in orange) listed in Global Forest Watch (https://www.globalforestwatch.org/) and calculation of EOO (minimum convex polygon) and AOO considering the same subpopulations according to GeoCat (https://geocat.iucnredlist.org/).

Because Timor's flora, particularly its pteridophytes, remains inadequately surveyed, the true number of individuals and subpopulations is likely greater than currently detected. The calculated AOO is therefore considered an underestimate, while the EOO is regarded as more reliable. Only one subpopulation (Monte Manucoco, Ataúro) falls within a protected area (Figure 11), so the number of locations is estimated at two: one within the protected area, facing lower risk from deforestation, and the remaining subpopulations, which lie outside the protected areas and face this risk directly. Given the observed continuing decline in forest habitat, this species is globally assessed as Vulnerable (VU B1 ab(iii)). As there is no demographic data, none of the other IUCN (2012a) criteria could be applied.

Dicksonia timorensis Adjie

According to Adjie et al. (2012), approximately 50 plants were discovered in 1995 and 1996 in a single population endemic to Mount Mutis, West Timor. About 15 years later, there were 68 adults and 8 juveniles. However, this is a fragile ecosystem that can easily be disturbed, for example, by intensive grazing (Adjie et al., 2012). Due to the small number of individuals, this species is globally assessed as Endangered under criterion D (EN D). Since we have no data indicating decline, nor quantitative demographic analyses, no other criteria apply.

Sphaerostephanos solutus Holttum

This species is known only from its type specimen, from an unknown location. No expeditions have been undertaken to locate it. In the absence of adequate data, it is assessed as Data Deficient (DD).

Forest habitat species

Adiantum diaphanum Blume

This species was observed in forest habitats at four localities in Timor-Leste. Its EOO and AOO are 444.7 km^2 and 16 km^2, respectively. As three subpopulations fall within protected areas (Figure 12), the number of locations is estimated at four: three corre-

sponding to the protected areas, and one for the single subpopulation lacking *in situ* protection, which is threatened by deforestation. Considering the continuing decline expected in these subpopulations due to forest habitat loss, this species is preliminarily assessed as Endangered (EN B1 ab(iii)). At the regional level (Timor Island), taking into account the long-distance dispersal of fern spores already noted in the Materials and Methods, together with the density and extent of points recorded for this species in the GBIF portal (Figure 13), it is assumed likely that Timorese subpopulations receive propagules from neighbouring islands, though this immigration may decline as forest cover decreases in those regions; since it is not known whether the Timorese population functions as a sink, the assessment remains unchanged at EN B1 ab(iii).

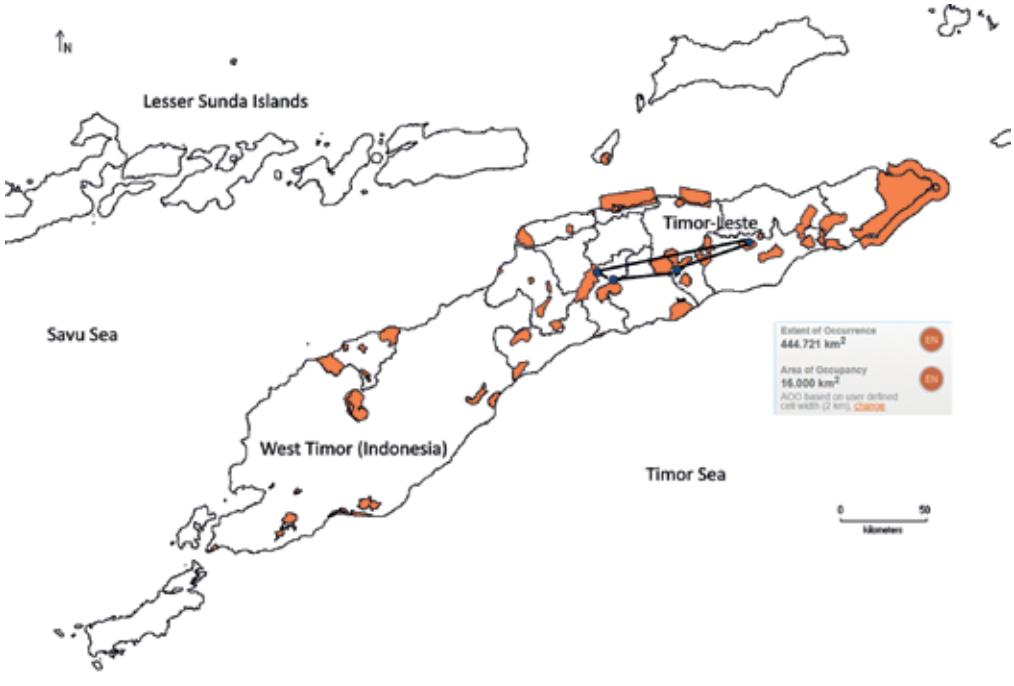


Figure 12 - Overlap of *Adiantum diaphanum* subpopulations with the boundaries of protected areas (in orange) listed in Global Forest Watch (https://www.globalforestwatch.org/) and calculation of EOO (minimum convex polygon) and AOO considering the same subpopulations according to GeoCat (https://geocat.iucnredlist.org/).



Figure 13 – Distribution map of *Adiantum diaphanum* in the territories surrounding the island of Timor (occurrence data downloaded from GBIF.org at https://doi.org/10.15468/dl.ywu7yx on 17 August 2026).

Arachniodes aristata (G.Forst.) Tindale

This species was collected in forest habitats at five locations in Timor-Leste. EOO was calculated at 6,470.7 km^2 and AOO at 20 km^2; the latter is again considered an underestimate. As three subpopulations fall within protected areas (Figure 14), the number of locations is estimated at four: three corresponding to the protected areas, and one for the two subpopulations outside them, which are expected to be threatened by deforestation. Considering the continuing decline expected in these subpopulations due to forest habitat loss, this species is preliminarily assessed as Vulnerable (VU B1 ab(iii)). Since there is no demographic data, none of the other IUCN (2012a) criteria can be applied.

For the final regional assessment, considering the high density and extent of points recorded for this species in the GBIF portal (Figure 15), a procedure similar to that used for the previous species was adopted, and the assessment remained unchanged at VU B1 ab(iii).

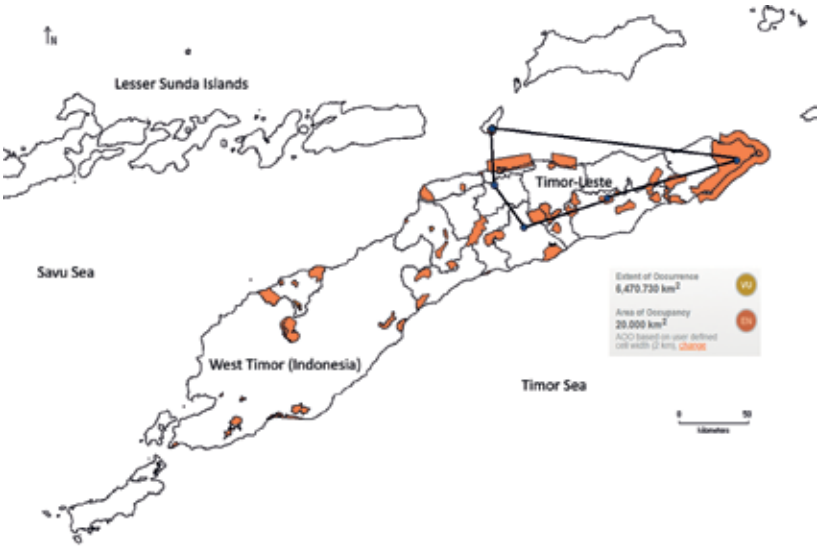


Figure 14 - Overlap of *Arachniodes aristata* subpopulations with the boundaries of protected areas (in orange) listed in Global Forest Watch (https://www.globalforestwatch.org/) and calculation of EOO (minimum convex polygon) and AOO considering the same subpopulations according to GeoCat (https://geocat.iucnredlist.org/).



Figure 15 – Distribution map of *Arachniodes aristata* in the territories surrounding the island of Timor (occurrence data downloaded from GBIF.org at https://doi.org/10.15468/dl.r499mg on 18 August 2026).

Asplenium caudatum G. Forst.

This species was collected in forest habitats at nine sites in Timor-Leste. EOO was calculated at 18,107.9 km² and AOO at 36 km²; the latter is considered an underestimate, as this species is believed to be more widespread. As five subpopulations fall within protected areas (Figure 16), the number of locations is estimated at six: five corresponding to the protected areas, and one for the three subpopulations outside them, which are threatened by deforestation. Considering the continuing decline estimated for this species' subpopulations due to forest habitat loss, it is preliminarily assessed as Vulnerable (VU B1 ab(iii)). Since there is no demographic data, none of the other IUCN (2012a) criteria can be applied.

For the final assessment at the national level, considering the range of points recorded for this species in the GBIF portal (Figure 17), a similar procedure to that for the previous species was adopted, with the assessment remaining unchanged at VU B1 ab(iii).

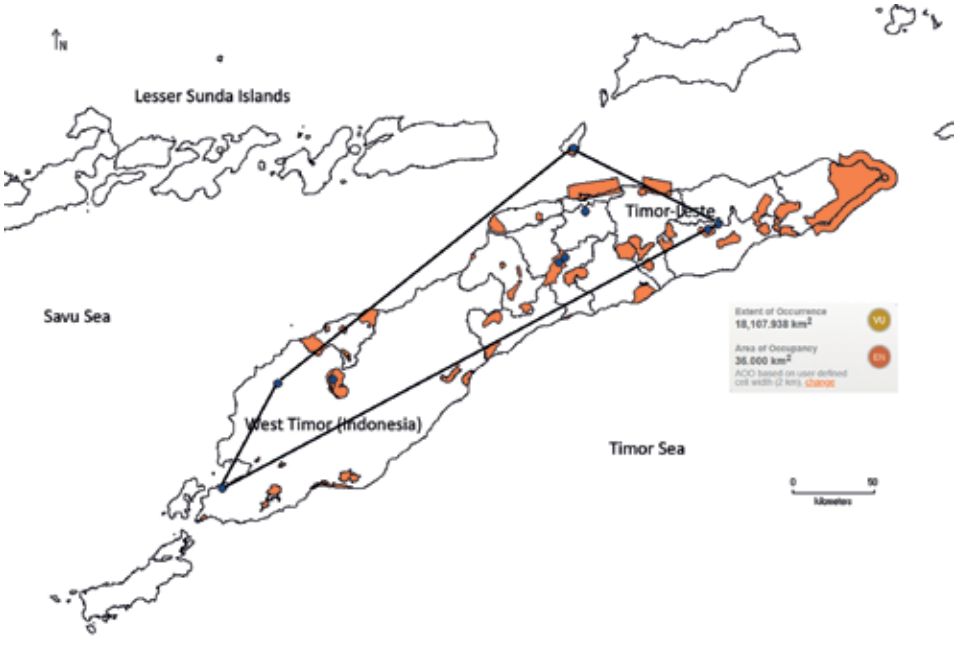


Figure 16 – Overlap of *Asplenium caudatum* subpopulations with the boundaries of protected areas (in orange) listed in Global Forest Watch (https://www.globalforestwatch.org/) and calculation of EOO (minimum convex polygon) and AOO considering the same subpopulations according to GeoCat (https://geocat.iucnredlist.org/).



Figure 17 – Distribution map of *Asplenium caudatum* in the territories surrounding the island of Timor (occurrence data downloaded from GBIF.org at https://doi.org/10.15468/dl.tvqvcd on 18 August 2026).

Asplenium nidus L.

This species was observed in forest habitats at seven locations in Timor-Leste (some observations from GBIF, https://www.gbif.org/species/2650676, were added to the specimens listed in the catalogue in Appendix I). EOO was calculated at 9,629.3 km^2 and AOO at 28 km^2 (Figure 18); these values fall within a threatened category. However, since all subpopulations, except one, are within protected areas (Figure 18), the number of locations cannot be estimated, as there is no threat specific to this species. Additionally, as there is no demographic data, none of the other IUCN (2012a) criteria can be applied, so this species preliminarily qualifies as Least Concern (LC). For the final evaluation, at a national level, considering the high density and extent of points recorded for this species in the GBIF portal (Figure 19), a similar procedure to that for the previous species was adopted, with the evaluation remaining unchanged at LC.

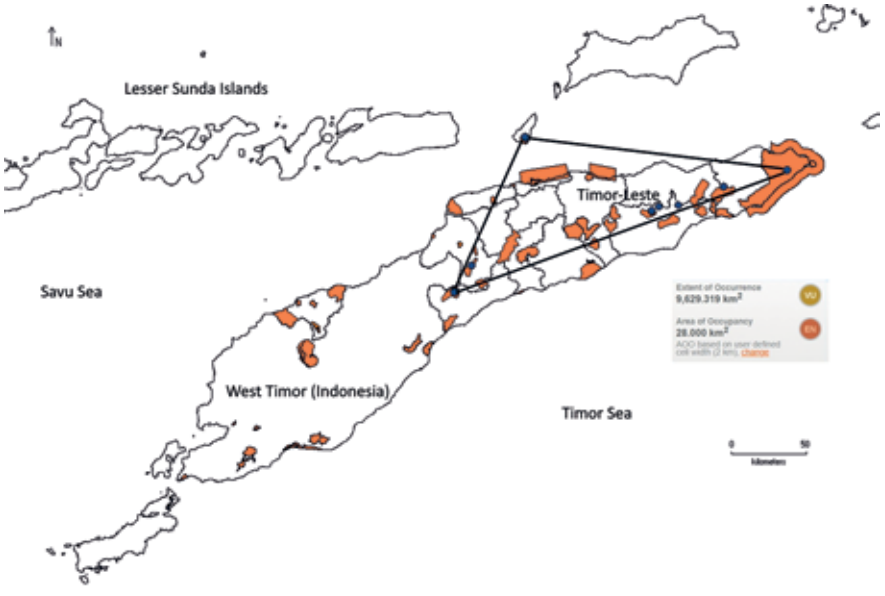


Figure 18 – Overlap of *Asplenium nidus* subpopulations with the boundaries of protected areas (in orange) listed in Global Forest Watch (https://www.globalforestwatch.org/) and calculation of EOO (minimum convex polygon) and AOO considering the same subpopulations according to GeoCat (https://geocat.iucnredlist.org/).



Figure 19 – Distribution map of *Asplenium nidus* in the territories surrounding the island of Timor (occurrence data downloaded from GBIF.org at https://doi.org/10.15468/dl.4ctape on 18 August 2026).

Asplenium salignum Blume

This species was observed in forest habitats at three localities in Timor-Leste. EOO was estimated at 32.8 km² and AOO at 12 km²; these values fall within a threatened category (Figure 20). In this case, because the point arrangement is linear, the AOO, although potentially underestimated as with other species, is considered to carry less error than the EOO calculation. Since two subpopulations are located within protected areas (Figure 20), the number of locations is estimated at three: two corresponding to the protected areas, and one for the subpopulation outside them, which is threatened by deforestation. Considering the continuing decline estimated for the subpopulations of this species due to forest habitat loss, this species is preliminarily assessed as Endangered (EN B2 ab(iii)). Since there is no demographic data, none of the other IUCN (2012a) criteria can be applied.

For the final assessment, at the national level, considering the points recorded for this species in the GBIF portal (Figure 21), it is unknown whether the Timorese subpopulations receive propagules from neighbouring islands. Therefore, the assessment remains unchanged at EN B2 ab(iii).

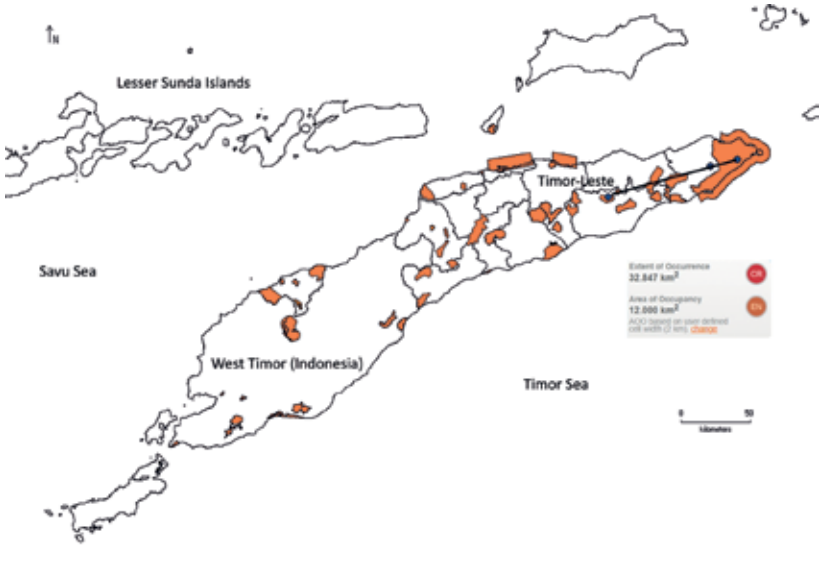


Figure 20 – Overlap of *Asplenium salignum* subpopulations with the boundaries of protected areas (in orange) listed in Global Forest Watch (https://www.globalforestwatch.org/) and calculation of EOO (minimum convex polygon) and AOO considering the same subpopulations according to GeoCat (https://geocat.iucnredlist.org/).



Figure 21 – Distribution map of *Asplenium salignum* in the territories surrounding the island of Timor (occurrence data downloaded from GBIF.org at https://doi.org/10.15468/dl.wp3twy on 18 August 2026).

Asplenium tenerum G. Forst.

This species was observed within forest habitat in a single area in Timor-Leste. EOO was calculated at 0.0 km^2 and AOO at 4 km^2 (Figure 22). Both values fall within the Critically Endangered (CR) category. However, since both observations are within the protected area of Mount Manucoco, the number of locations cannot be calculated. Equally, this species is not experiencing a continuing decline. However, the total subpopulation is estimated at fewer than 50 mature individuals, preliminarily qualifying it as CR under criterion D.

For the final assessment at the national level, considering the high density and extent of points recorded for this species in the GBIF portal (Figure 23), a procedure similar to that used for previous species was adopted, with the assessment remaining unchanged, resulting in CR D.

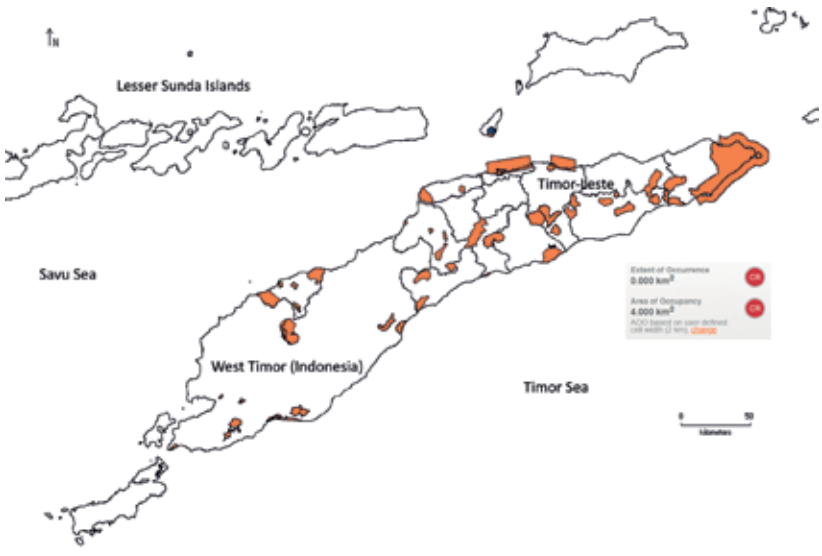


Figure 22 – Overlap of *Asplenium tenerum* subpopulations with the boundaries of protected areas (in orange) listed in Global Forest Watch (https://www.globalforestwatch.org/) and calculation of EOO (minimum convex polygon) and AOO considering the same subpopulations according to GeoCat (https://geocat.iucnredlist.org/)



Figure 23 – Distribution map of *Asplenium tenerum* in the territories surrounding the island of Timor (occurrence data downloaded from GBIF.org at https://doi.org/10.15468/dl.wsxj8s on 18 August 2026).

Final considerations on extinction risk assessment

Three endemic species were assessed globally, and six non-endemic species native to forest habitats were assessed regionally for Timor Island (Table 3). The assigned categories ranged from DD and LC to CR, with three species falling into each of the intermediate categories, VU and EN. Because the assessment is a time-consuming process, it was not possible to evaluate more of the nearly 40 forest-habitat species catalogued (see Ecology in Appendix I). However, we consider that this should be done in future, to help define conservation measures for the island of Timor. Increased sampling effort for Timor's vascular plants, ideally including more demographic and threat-related information, should be undertaken to allow extinction risk assessments of more species.

Finally, it should be mentioned that eleven species included in the checklist, namely *Christella hispidula*, *Coniogramme intermedia*, *Diplazium microphyllum*, *Dryopteris adnata*, *Elaphoglossum angulatum*, *Parapolystichum rufescens*, *Rumohra adiantiformis*, *Tectaria paradoxa*, *Tectaria polymorpha*, *Tectaria sagenioides* and *Tectaria teysmanniana*, are known from Timor only from historical herbarium collections. Although these taxa are not endemic, it is worth highlighting this, as they may now be regionally extinct and merit future research on the island.

Table 3 - List of Pteridophytes of Timor assessed according to IUCN (2012a) criteria and their evaluation.

Taxon	Endemic/Forest species	Assessment	Level
Adiantum diaphanum	Forest species	EN B1 ab(iii)	Regional
Arachniodes aristata	Forest species	VU B1 ab(iii)	Regional
Asplenium caudatum	Forest species	VU B1 ab(iii)	Regional
Asplenium nidus	Forest species	LC	Regional
Asplenium salignum	Forest species	EN B2 ab(iii)	Regional
Asplenium tenerum	Forest species	CR D	Regional
Christella timorensis	Endemic	VU B1 ab(iii)	Global
Dicksonia timorensis	Endemic	EN D	Global
Sphaerostephanos solutus	Endemic	DD	Global

Conclusions

This study contributes to a better understanding of Timor's pteridophyte flora, particularly by more than doubling the number of recorded taxa compared with the most recent study of this group published for the island (Posthumus, 1944), and through the 52 new species now recorded for this territory.

The families with the largest number of species were Pteridaceae, with 43 species (20%), followed by Polypodiaceae, with 31 species (14%), and Thelypteridaceae, with 26 species (12%). The most abundant genera were *Asplenium*, with 16 species (8% of the total). Next were *Pteris*, with 13 taxa (6%), *Tectaria*, with 11 species (5%), *Adiantum* and *Davallia* (4% each), *Pyrrosia*, *Sphaerostephanos*, and *Christella*, with 3% each, and finally *Selaginella*, with 2%. Of the total taxa identified, the majority (66%) are terrestrial, followed by epiphytes (26%), with rock (7%) and aquatic (1%) species being the minority.

The data obtained indicate that total species richness is high at low altitudes but increases further with altitude, reaching a maximum between 1,200 and 1,500 m. At higher altitudes (1,800 to 3,000 m), the data indicate a marked decrease in species richness, although this topic warrants further study, with a more even sampling effort across the different altitude ranges.

The analysis of the geographic distribution of georeferenced collection sites showed that there is still a need for more intense and widely dispersed sampling throughout the island of Timor.

It was possible to assess the extinction risk of two endemic species: one as VU and the other as EN, with the third listed as DD. Six forest-dwelling species were also assessed, as they are currently the only ones for which population decline can be inferred from the general reduction in forest area. Their categories ranged from LC to CR. Future work should aim to assess all forest-dwelling species, which total approximately 40, using the available data, and to carry out further collections and surveys of demographic data and potential threats across the island, particularly for Pteridophytes, to better assess their extinction risk.

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Appendix I - Checklist of the ferns and lycophytes of Timor

Aspleniaceae

Asplenium aethiopicum (Burm.f.) Bech., Candollea 6: 23 (1935); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 26 (2002). — *Trichomanes aethiopicum* Burm.f., Fl. Ind., Prodr. Fl. Cap.: 32 [err. 28] (1768).
Ecology: Lithophytic, in clefts of rocks and ravines, on moist soils, sometimes on limestone or *Eucalyptus* forests, from 1500 to 2950 m.
Distribution: Pantropical.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Ainaro, Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 63 (BO, n.v.**); Timor-Leste – Ainaro**, [Mount Tata Mailau, 8°54'23" S, 125°29'35" E], {Mt Tatamailau}, 5 January 1954, *van Steenis* 18439 (BO, BM, L.3508717, LISC061406); **Viqueque**, [Mount Mundo Perdido, 8°43'10" S, 126°19'34" E], {Mt Perdido (ascent of Ossu)}, 23 December 1953, *van Steenis* 18311 (BM, L.3508718).

Asplenium caudatum G.Forst., Fl. Ins. Austr.: 80 (1786); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885); Rensch, Hedwigia 74: 238 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 75 (1944).
Ecology: Terrestrial, sometimes lithophytic, in moist forests, from 10 to 2500 m.
Distribution: SE Asia and Polynesia.
Distribution in Timor: West Timor – Kupang, South Central Timor**;** Timor-Leste – Aileu, Ainaro, Díli, Viqueque.
Specimens: West Timor – Kupang, [Bioba, 9°35'00" S, 123°55'00" E], {kp. Bioba }, 4 March 1939, *Bloembergen* 3406 (BO, L.3502840); [Kupang, 10°10'15" S, 123°36'25" E], December 1985, *Yoshida* 62200 (BO); **South Central Timor**, [Nuaf Nefomasi, 9°33'38" S, 124°13'48" E], {Moetisgebirge}, 22 February 1932, *Stein* 824 (Rensch 1934: 238); {Moetis}, 15 November 1935, *De Voog* 2349 (BO); **Timor-Leste – Aileu**, Asumau, [8°37'12" S, 125°38'42" E], September 2016, *Costa et al.* 202 (AVE, L.3959663); **Ainaro**, Maubisse-Hato Builico, [8°52'53" S, 125°31'44" E], 10 February 2005, *Paiva, Silveira & Sousa* T 393 (AVE, COI00080470, L); [Mount Tata Mailau, 8°54'23" S, 125°29'35" E], {Ramelau}, 30 April 1932, *Stein* 1145 (Posthumus 1944: 76); **Díli**, Manucoco,

[8°15′57″ S, 125°34′42″ E], 8 August 2016, *Costa et al.* 119 (AVE, L.3959676); **Viqueque**, Dauboruba'a, [8°41′29″ S, 126°23′16″ E], 29 October 2016, *Costa et al.* 214 (AVE, L); 29 October 2016, *Costa et al.* 214 (AVE, L.3959662); Mundo Perdido, c. 33 km SSW of Baucau, [8°43′16″ S, 126°19′56″ E], 28 September 2006, *Pinto & Trainor* 88 (DNA0193438, n.v.); 28 September 2006, *Pinto & Santana* 56 (DNA0193422, n.v.).

Asplenium cuneatum Lam., Encycl. 2(1): 309 (1786); Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 347 (1834); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 76 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 22 (2002).
Ecology: Savanna and mixed tropical monsoon forest, from 200 to 600 m.
Distribution: Pantropical.
Distribution in Timor: West Timor – without loc. and possibly also somewhere in Timor-Leste.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 11, 14a, 14b (BO, n.v.).
Timor (loc. not specified) – {without loc.}, s.d., *Anonymous* s.n (P00526922); s.d., *Guichenot* s.n. (P00526923).

Asplenium erectum Bory ex Willd., Sp. Pl., ed. 4, 5: 328 (1810).
Asplenium diaphanum auct. non Bl.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885) p.p. quoad Forbes 3864.
Asplenium lunulatum auct. non Sw.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885) p.p. quoad Forbes 3867; Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 78 (1944).
Ecology: Not mentioned in the specimens below for Timor, but recorded as terrestrial from shaded moist evergreen forests, from seal level to 1700m from South Africa (Crouch et al., 2011).
Distribution: E and S Africa, Madagascar and other Indian Ocean islands, India, Java, Lesser Sunda Islands (Timor), and (Western) Samoa (Savaii).
Distribution in Timor: Timor-Leste – Manatuto.
Specimens: Timor-Leste – Manatuto, [Soibada, 8°52′ S, 125°57′ E], {Samoro (Mount Sobale)}, 1883, *Forbes* 3867 (BM); 1883, *Forbes* 3864 (BM).

****Asplenium exiguum*** Bedd., Ferns S. India: t.146 (1863).
Ecology: Not mentioned for Timor, but recorded as lithophytic in Thailand, Laos and Cambodia.

Distribution: Russia (SW Siberia), Mongolia, China, Nepal, India, N Myanmar, N Vietnam, Thailand, Philippines, Papua New Guinea, Timor and North America (Mexico, United States).
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Soe, 9°52′ S, 124°17′ E], {Soë}, February 1929, *Walsh* 101 (BM); [Kapan, 9°44′05″ S, 124°16′26″ E], {Kapan}, 17 March 1939, *Bloembergen* 3493 (L.3507063); [Supul, 9°50′40″ S, 124°26′49″ E], {Supul}, 12 July 1968, *Schmutz* 2350 (L.3507062); 12 July 1968, *Kooy* 526 (L.3507064).

****Asplenium laserpitiifolium*** Lam., Encycl. 2(1): 310 (1786).
Ecology: Epiphytic, on *Arenga pinnata* and other forest trees, from 400 to 1190 m.
Distribution: Seychelles, India, Continental SE Asia, Malesia, Australia and Pacific islands.
Distribution in Timor: Timor-Leste – Dili, Lautém, Viqueque.
Specimens: Timor-Leste – Díli, Manucoco, [8°15′52″ S, 125°34′30″ E], 8 August 2016, *Costa et al.* 130 (AVE, L.3959657); Atauro Island, NW slope Manucoco., [8°16′10″ S, 125°34′27″ E], 19 May 2015, *Cowie & Santana* 13914 (DNA0270178, n.v.; L.3978093); **Lautém**, Mount Paitxau Range, near Malahara., [8°28′33″ S, 127°10′31″ E], 1 March 2006, *Cowie* 11041 (DNA0177839, n.v.; L.3510649); **Viqueque**, Dauboruba'a, [8°41′29″ S, 126°23′16″ E], 29 October 2016, *Costa et al.* 225 (AVE, L.3959656).

Asplenium nidus L., Sp. Pl. : 1079 (1753); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 26 (2002). **(Figure II.1)**
Ecology: Epiphytic in forest, mixed tropical monsoon and montane, from 390 to 1800 m.
Distribution: Widespread from East Africa through India, Sri Lanka, SE Asia, Australia and the Pacific to Tahiti and Hawai'i.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Díli, Lautém, Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 22, 47 (BO, n.v.); **Timor-Leste – Díli**, Manucoco, [8°15′52″ S, 125°34′30″ E], 8 August 2016, *Costa et al.* 128 (AVE, L.3959665); **Lautém**, Malahara, near Los Palos, [8°24′03″ S, 127°10′54″ E], 1 October 2004, *Trainor* 48 (DNA0179042, n.v.); **Viqueque**, Dauboruba'a, [8°41′29″ S, 126°23′16″ E], 29 October 2016, *Costa et al.* 223 (AVE, L.3959661); Mundo Perdido, c. 33 km SSW of Baucau, [8°43′16″ S, 126°19′56″ E], 28 September 2006, *Pinto & Santana* 51 (DNA0193421, n.v.).

Asplenium normale D.Don, Prodr. Fl. Nepal.: 7 (1825); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 26 (2002).
Asplenium minus Blume, Enum. Pl. Javae 2: 183 (1828); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 76 (1944).
Ecology: Terrestrial, in *Podocarpus-Eugenia* montane rain forest, and other montane ecosystems, from 1700 to 2000 m.
Distribution: E Africa, India, Continental SE Asia, Malesia, Japan, Australia and Hawaii.
Distribution in Timor: West Timor **–** South Central Timor; Timor-Leste **–** Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 87, 94 (BO, n.v.); **South Central Timor**, [Nuaf Nefomasi, 9°33'38" S, 124°13'48" E], {Mt Moetis}, 15 November 1935, *De Voog* 2346 (BO, fide Posthumus, not found); **Timor-Leste – Viqueque**, [Mount Mundo Perdido, 8°43'16" S, 126°19'56" E], {Mt Perdido (ascent of Ossu)}, 23 December 1953, *van Steenis* 18282 (BM, L.3504513, LISC061405).

****Asplenium persicifolium*** J.Sm., J. Bot. (Hooker) 3: 408 (1841).
Ecology: Lithophytic, sometimes terrestrial, in forests, from 900 to 1300 m.
Distribution: Philippines, Borneo, Sulawesi and Timor.
Distribution in Timor: Timor-Leste **–** Bobonaro, Díli, Viqueque.
Specimens: Timor-Leste – Bobonaro, Tapó, [9°03'05" S, 125°16'22" E], 17 September 2016, *Costa et al.* 184 (AVE, L.3959660); **Díli**, Manucoco, [8°15'52" S, 125°34'30" E], 8 August 2016, *Costa et al.* 129 (AVE, L.3959658); **Viqueque**, Dauboruba'a, [8°41'29" S, 126°23'16" E], 29 October 2016, *Costa et al.* 213 (AVE, L.3959659).

Asplenium polyodon G.Forst., Fl. Ins. Austr.: 80 (1786); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 27 (2002).
Asplenium adiantoides auct. non (L.) Lam.; Posthumus, Ann. Bot. Gard. Buitenzorg Vol. Hors Sér.: 75 (1944).
Asplenium falcatum auct. non Lam.; Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885).
Ecology: Lithophytic, frequently on limestone, sometimes terrestrial or epiphytic, in forests, forest roadsides, edges of rivers and waterfalls, from 50 to 1300 m.
Distribution: Widespread from Madagascar through tropical Asia, to, Australia, New Zealand and Pacific islands.
Distribution in Timor: West Timor – Kupang, South Central Timor; Timor-Leste –

Aileu, Baucau, Bobonaro, Covalima, Díli, Lautém, Manufahi, Viqueque.
Specimens: West Timor –{without loc.}, s.d., *Ruma* 26a, 26b, 33 (BO, n.v.); **Kupang**, [Obenaik, 9°52′06″ S, 124°00′09″ E], {Ober Naik}, March 1925, *Smith* 2492 B (K); **South Central Timor**, [Soe, 9°52′ S, 124°17′ E], {Soë}, March 1925, *Smith* 2506 A & B (BM, K); March 1925, *Smith* 2492 A (BM); **Timor-Leste – Aileu**, edge of the Buklelu river, [8°36′48″ S, 125°31′57″ E], 1 April 2017, *Costa et al.* 235 (AVE, L); 1 April 2017, *Costa et al.* 235 (AVE, L); **Baucau**, Waidede forest, [8°36′41″ S, 126°22′38″ E], 6 May 2017, *Costa et al.* 276 (AVE, L); [Baucau, 8°28′33″ S, 126°27′23″ E], {Limestone plateau of Baucau}, 15 December 1953, *van Steenis* 18017 (BM, L.3506958, LISC061404); **Bobonaro**, Tapó, [9°03′05″ S, 125°16′22″ E], 17 September 2016, *Costa et al.* 181 (AVE, L.3959654); **Covalima**, Fatuk-Sikun forest, [9°26′52″ S, 125°05′24″ E], 18 April 2017, *Costa et al.* 264 (AVE, L); **Díli**, Manucoco, [8°16′15″ S, 125°34′56″ E], 7 August 2016, *Costa et al.* 96 (AVE, L.3959653); Atauro Island, eastern slopes of Mount Manucoco, [8°16′10″ S, 125°34′27″ E], 13 May 2015, *Cowie & Santana* 13766 (DNA0269605, n.v.); **Lautém**, Mehara area, near Los Palos, [8°24′03″ S, 127°10′54″ E], 2 October 2005, *Cowie & Xavier* 10706 (DNA0176980, n.v.; L.3508800); Malahara area, Mount Paitxau Range., [8°24′03″ S, 127°10′54″ E], 25 October 2006, *Cowie & Santana* 11302 (DNA0185063, n.v.; L.3508799); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, s.d., *Forbes* 3692 (BO, fide Posthumus, not found); **Viqueque**, near the base of Mount Laritame, [8°41′42″ S, 126°22′42″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 566 (AVE); Wadú forest, [8°46′17″ S, 126°22′36″ E], 11 May 2017, *Costa et al.* 292 (AVE, L); roadside at the waterfall of Lui-Huno, [8°46′58″ S, 126°22′33″ E], 11 May 2017, *Costa et al.* 298 (AVE, L); Waibua forest at foothills of Mundo Perdido Mountain, [8°43′59″ S, 126°22′10″ E], 12 May 2017, *Costa et al.* 304 (AVE, L); TIMOR – {without loc.}, s.d., *Anonymous* s.n. (L).

****Asplenium salignum*** Blume, Enum. Pl. Javae 2: 175 (1828).
Ecology: Remnant montane forest, from 390 to 1450 m.
Distribution: Myanmar, S Thailand, Sumatra, Malaysia, Borneo, Sulawesi, Java and Lesser Sunda Islands (Bali, Timor).
Distribution in Timor: Timor-Leste – Lautém, Viqueque.
Specimens: Timor-Leste – Lautém, Legumau, 26 km WSW of Los Palos, [8°31′15″ S, 126°59′59″ E], 18 October 2005, *Trainor* 19 b (DNA0178426, n.v.; L.3721689); Mount Paitxau Range, near Malahara, [8°28′33″ S, 127°10′31″ E], 1 March 2006, *Cowie* 11040 (DNA0177838, n.v.; L.3503805/6); **Viqueque**, Mundo Perdido, c. 33 km

SSW of Baucau, [8°43'16" S, 126°19'56" E], 28 September 2006, *Pinto & Santana* 55 (DNA0193425, n.v.; L.3503804).

Asplenium simile Blume, Enum. Pl. Javae 2: 181 (1828).
Asplenium heterodon Blume, Enum. Pl. Javae 2: 179 (1828); Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 347 (1834).
Asplenium macrophyllum auct. non Sw.: Kuhn, Forschungsr. Gazelle 4(Farne): 7 (1889); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 75 (1944).
Ecology: Lithophytic, at 600 m.
Distribution: From Comoros, Madagascar, La Réunion, Mauritius, Chagos Arch. (Diego Garcia), India, Bangladesh, and SE Asia to western tropical Polynesia.
Distribution in Timor: West Timor – Kupang; Timor-Leste – loc. not specified.
Specimens: West Timor – Kupang, [Taimanani Mountains, 9°57'47" S, 123°36'26" E], {Taimanani Mts}, 23 May 1875, *Naumann* s.n. (B 20 0017682, B 20 0017682a, B 20 0017683, B 20 0017684); **Timor-Leste –** {without loc.}, s.d., *Forbes* 3124 a (Posthumus 1944: 75).

Asplenium stereophyllum Kunze, Bot. Zeitung (Berlin) 6: 175 (1848); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 77 (1944).
Ecology: Generally epiphytic in forests in the Lesser Sunda Islands and at c. 1,000 m in Timor.
Distribution: Sumatra, Java and Lesser Sunda Islands (Lombok, Flores, Timor).
Distribution in Timor: Timor-Leste – Manufahi.
Specimens: Timor-Leste – Manufahi, [Bubususu, 8°54'52" S, 125°47'00" E], {Bibiçuçu}, 1883, *Forbes* 3596 (BM).

****Asplenium tenerum*** G.Forst., Fl. Ins. Austr.: 80 (1786). **(Figure II.2)**
Ecology: Lithophytic, in the shade of *Arenga pinnata*, on mountains, at c. 850 m.
Distribution: India, Sri Lanka, Myanmar, China, Korea, Japan, Vietnam, Philippines, Malaysia, Indonesia and Pacific islands.
Distribution in Timor: Timor-Leste – Díli.
Specimens: Timor-Leste – Díli, Manucoco, [8°15'52" S, 125°34'35" E], 8 August 2016, *Costa et al.* 121 (AVE, L.3959664); Atauro Island, northern slope of Mount Manucoco ridge., [8°16'10" S, 125°34'27" E], 19 May 2015, *Cowie & Santana* 13838 (DNA0270300, n.v.).

Asplenium trichomanes L., Sp. Pl.: 1080 (1753); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 78 (1944).
Ecology: Terrestrial or lithophytic, in forests, damp places, bordering tracks and watercourses, from 880 to 2700 m.
Distribution: Worldwide in all temperate zones, and in the tropics on high mountains.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Ainaro.
Specimens: West Timor – South Central Timor, [Soe, 9°52′ S, 124°17′ E], {Soe}, 15 February 1929, *Walsh* 517 (BO); [Kapan, 9°44′05″ S, 124°16′26″ E], {vicinity of Nasimètan rain forest, 6 km S of Kapan, near Tatu}, 11 March 1939, *Bloembergen* 3463 (BO, K, L.3508256); **Timor-Leste – Ainaro**, track to the top of Ramelau, [8°52′37″ S, 125°35′04″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 430 (AVE, COI00080492, L); 11 February 2005, *Paiva, Silveira & Sousa* T 451 (AVE, L); [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Mt Tatamailau}, 5 January 1954, *van Steenis* 18443 (L.3508255, LISC061407); [Suro, 9°01′30″ S, 125°31′30″ E], {Suro, Huati Builico, faldas do Tata-Mailau}, s.d., *Cinatti* II 30 A (LISC061409).

Asplenium vulcanicum Blume, Enum. Pl. Javae 2: 176 (1828); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 78 (1944).
Ecology: Not mentioned specifically for Timor, but mentioned by Posthumus (1944) as occurring in primary and old secondary forest, on trees, for Bali, Lombok, Sumbawa, Flores and Timor.
Distribution: Sri Lanka, Taiwan, Malesia and Micronesia (Truk, Pohnpei, Kosrae).
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Kapan, 9°44′05″ S, 124°16′26″ E], {rogenboschje Nasimetan ten z. van Kapan}, 16 March 1939, *Bloembergen* 3484 (L.3508527).

Asplenium sp. A
Specimens: Timor-Leste – Ainaro, track to the top of Ramelau, [8°52′37″ S, 125°35′04″ E], terrestrial fern with vertical rhizome, 11 February 2005, *Paiva, Silveira & Sousa* T 417 (AVE, L); 11 February 2005, *Paiva, Silveira & Sousa* T 450 (AVE, COI00080477, L); 11 February 2005, *Paiva, Silveira & Sousa* T 455 (AVE, COI00080476, L); [8°53′37″ S, 125°31′07″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 461 (AVE, COI00080481, L.3526021).

Asplenium sp. B
Specimens: Timor-Leste – Viqueque, Mount Mundo Perdido, [8°43'16" S, 126°19'56" E], terrestrial fern, 6 February 2005, *Paiva, Silveira & Sousa* T 517 (AVE, COI00080489, L.3525996).

Asplenium sp. C
Specimens: Timor-Leste – Viqueque, Mount Mundo Perdido, [8°42'45" S, 126°20'25" E], epiphytic fern, in a shaded area, 16 February 2005, *Paiva, Silveira & Sousa* T 541 (AVE, COI00092279, L.3525997); Dauboruba'a, [8°41'29" S, 126°23'16" E], 29 October 2016, *Costa et al.* 216 (AVE, L.3959655).

Asplenium sp. D
Specimens: Timor-Leste – Díli, Atauro Island, crest of ridge near Mount Manucoco, [8°16'10" S, 125°34'27" E], 19 May 2015, *Cowie & Santana* 13807 (DNA0269663, n.v.; L.3978210); **Manatuto**, [Soibada, 8°52' S, 125°57' E], {Samoro (Mount Sobale)}, 1883, *Forbes* 4063 (BM).

Athyriaceae

Athyrium cumingianum (C.Presl) Milde Bot. Zeitung (Berlin) 28: 353 (1870); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 71 (1944). **(Figure II.3)**
Anisocampium cumingianum C.Presl, Epimel. Bot. 59 (1851 ['1849']).
Ecology: Terrestrial, sometimes lithophytic, in forests, from 70 to 2000 m.
Distribution: Himalayas, S India, Sri Lanka, S China, S&SW Taiwan, S Myanmar, Thailand, S Laos, N Cambodia, N Philippines, E Java, S Sulawesi and Lesser Sunda Islands (Bali, Sumbawa, Timor).
Distribution in Timor: Timor-Leste – Díli, Manatuto.
Specimens: Timor-Leste – Díli, forest of Dare, [8°35'39" S, 125°34'00" E], 31 January 2018, *Costa* 333 (AVE, L); [Díli, 8°33'14" S, 125°34'42" E], {Dilly}, 28 April 1938, *Jaag* 100 (BO, fide Posthumus, not found); [Lahane, 8°34'25" S, 125°35'00" E], {Lahane}, 1911, *De Castro* 105 (BO, fide Posthumus, not found); **Manatuto**, Soibada, Malushum, [8°51'38" S, 125°58'52" E], 25 June 2016, *Costa et al.* 30 (AVE, L.3959703).

Athyrium nigripes (Blume) T.Moore, Index Fil., fasc. 1: xlix (1857); Posthumus, Ann.

Bot. Gard. Buitenzorg, Vol. Hors Sér.: 71 (1944).
Ecology: Not mentioned specifically for Timor, but mentioned by Posthumus (1944) as occurring in primary rain and *Eucalyptus* forest, as terrestrial, for Flores and Timor.
Distribution: Japan, Korea, China, Taiwan, India, Nepal, Sri Lanka, Vietnam, Malaysia, Sumatra, Java, Philippines (Luzon), Sulawesi, Lesser Sunda Islands (Flores, Timor), Moluccas, New Guinea.
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Mt. Moetis}, 15 November 1935, *De Voog* 3245 (BO, fide Posthumus, not found).

****Deparia petersenii*** (Kunze) M.Kato, Bot. Mag. (Tokyo) 90(1017): 37 (1977).
Asplenium japonicum auct. non Thunb.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885). — *Diplazium japonicum* auct. non (Thunb.) Bedd.: Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 72 (1944).
Ecology: Only the altitude, 900 m, was recorded in the studied specimens from Timor, but mentioned from moist ravines, near small rivers, often as cremnophytes by Posthumus (1944: 72), based on data from Bali and/or Flores.
Distribution: Himalayas to China and Japan, throughout SE Asia to E Australia, New Zealand and Polynesia.
Distribution in Timor: Timor-Leste – Aileu, Manufahi.
Specimens: Timor-Leste – Aileu, c. 2.4 km S by W of Remexio, [8°37′13″ S, 125°38′44″ E], 4 November 2006, *Cowie* 11415 (DNA0185574, n.v.); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {camp at Bibiçuçu}, 1883, *Forbes* 3607 (BM).

Diplazium esculentum (Retz.) Sw., J. Bot. (Schrader) 1801(2): 312 (1803); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 37 (2002). **(Figure II.4)**
Ecology: Terrestrial, near streams, water springs and in savannas, from 300 to 890 m.
Distribution: Tropical Asia, subtropical and tropical Polynesia.
Distribution in Timor: West Timor – Belu; Timor-Leste – Aileu, Díli, Ermera.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 44a, 44b, 48, 52 (BO, n.v.); **Belu**, [Atambua, 9°06′22″ S, 124°53′33″ E], {Abis (Lamaknen)}, 23 May 1966, *Friedberg* 202 (LISC061391); **Timor-Leste – Aileu**, from Díli to Aileu, after the crossroad to Remexio and Remexio, [8°37′05″ S, 125°38′25″ E], 25 September 2016, *Costa et al.* 195 (AVE, L.3959688); Asumau, [8°36′52″ S, 125°39′54″ E], 25 September 2016, *Costa et al.* 211

(AVE, L.3959690); **Díli**, Dare, [8°35’39” S, 125°34’00” E], 22 July 2016, *Costa et al.* 82 (AVE, L); **Ermera**, roadside between Railaco and Gleno, [8°41’35” S, 125°24’42” E], 27 August 2016, *Costa et al.* 156 (AVE, L.3959687).

Diplazium microphyllum Desv., Mém. Soc. Linn. Paris 6(3): 281, t. 7, f. 1 (1827); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 72 (1944).
Asplenium laevigatum Decne., Nouv. Ann. Mus. Hist. Nat. 3: 347 (1834)
Ecology: Not mentioned for Timor.
Distribution: Java, Timor and Maluku (Seram, Yamdena).
Distribution in Timor: not specified.
Specimens: Timor (loc. not specified) – {without loc.}, s.d., *Spanoghe* s.n. (L.3543928); s.d., *Spanoghe* s.n. (L3543929); s.d., *Guichenot* s.n. (P); *Baudin* s.n. (P, fide Posthumus, not found).

Diplazium polypodioides Blume, Enum. Pl. Javae 2: 194 (1828); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 38 (2002).
Athyrium asperum (Blume) Milde, Bot. Zeitung (Berlin) 28: 353 (1870); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 28 (2002).
Ecology: Terrestrial, in forests, roadsides and near springs, from 500 to 900 m.
Distribution: Sri Lanka, S India, Himalaya, Indochina, throughout Malesia, north to Taiwan.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Baucau, Díli.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 5a, 5b, 103a, 103b, 105a, 105b (BO, n.v.); **Timor-Leste – Baucau**, roadside from Venilale to Baucau, [8°36’13” S, 126°22’57” E], 29 October 2016, *Costa et al.* 233 (AVE, L.3959683); near Waimata Mori spring water, [8°36’43” S, 126°23’04” E], 6 May 2017, *Costa et al.* 286 (AVE, L); **Díli**, Manucoco, [8°15’52” S, 125°34’30”], 8 August 2016, *Costa et al.* 127 (AVE, L.3959684); Atauro Island, NW slope Manucoco., [8°16’10” S, 125°34’27” E], 19 May 2015, *Cowie & Santana* 13913 (DNA0270177, n.v.; L.3978092).

Diplazium proliferum (Lam.) Kaulf., Enum. Filic. 182 (1824).
Diplazium repandum Blume, Enum. Pl. Javae 2: 191 (1828); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 73 (1944).
Diplazium swartzii Blume, Enum. Pl. Javae 2: 191 (1828); Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 347 (1834).

Ecology: Terrestrial, in forests, c.1200 m.
Distribution: Widespread in tropical Africa, including Madagascar and neighbouring islands, and Malesia to central Polynesia and E Australia.
Distribution in Timor: Timor-Leste – Viqueque.
Specimens: Timor-Leste – Viqueque, Dauboruba'a, [8°41'29" S, 126°23'16" E], 29 October 2016, *Costa et al.* 227 (AVE, L.3959686); **Timor** (loc. not specified) – {without loc.}, s.d., Guichenot s.n. (P00526916).

***Diplazium* sp. A**
Specimens: Timor-Leste – Viqueque, Mundo Perdido, c. 33km SSW of Baucau., [8°43'16" S, 126°19'56" E], 28 September 2006, *Pinto & Santana* 50 (DNA0193420, n.v.; L.3727510).

***Diplazium* sp. B**
Specimens: Timor-Leste – Ainaro, Maubisse-Hato Builico, [8°52'53" S, 125°31'44" E], banks of a mountain stream, 10 February 2005, *Paiva, Silveira & Sousa* T 388 (AVE, COI00080475, L.3533827).

***Diplazium* sp. C**
Specimens: Timor-Leste – Ermera, near ancient forest of Mahubo, after old Ermera, [8°44'03" S, 125°20'20" E], terrestrial fern, 19 February 2005, *Paiva, Silveira & Sousa* T 601 a (AVE, COI00080473, L).

***Diplazium* sp. D**
Specimens: Timor-Leste – Liquiçá, roadside between Tibar and Faiten, place slightly ahead of the latter, [8°37'24" S, 125°28'44" E], roadside, terrestrial fern, 23 June 2016, *Costa et al.* 16 (AVE, L.3959685).

***Diplazium* sp. E**
Specimens: Timor-Leste – Ermera, roadside between Gleno and Ermera, [8°44'47" S, 125°26'16" E], terrestrial fern, 27 August 2016, *Costa et al.* 166 (AVE, L.3959630).

Blechnaceae

Austroblechnum patersonii subsp. ***queenslandicum*** (T.C.Chambers & P.A.Farrant)

Gasper & V.A.O.Dittrich, Phytotaxa 275(3): 203 (2016).
Blechnum patersonii (R.Br.) Mett., Fil. Hort. Bot. Lips. 64, t.4, f.4– 10 (1856); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 79 (1944); Nooteboom et al. in Fl. Males., Ser. 2, 4: 49 – 50 (2012).
Ecology: Not mentioned in the studied specimens from Timor, but recorded from rainforest and eucalyptus forest, on rocks, by Posthumus (1944: 79) and as terrestrial or lithophytic, on moist banks near creeks, in wet sclerophyll forest and in rain forest, in Australia.
Distribution: Lesser Sunda Islands (Bali, Flores, Timor), Papua New Guinea, Australia (E Queensland and NE NSW) and New Zealand.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Viqueque.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Mt Moetis}, 15 November 1935, *De Voog* 2352 (BO, fide Posthumus, not found); **Timor-Leste – Viqueque**, [Mount Mundo Perdido, 8°43′16″ S, 126°19′56″ E], {Mt Perdido (ascent of Ossu)}, 23 December 1953, *van Steenis* 18256 (L.3520789, LISC061410).

Blechnopsis orientalis (L.) C.Presl, Epimel. Bot.: 117 (1851). — *Blechnum orientale* L., Sp. Pl. : 1077 (1753); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 79 (1944).
Ecology: Terrestrial, sometimes on limestone, on roadsides and in forests, from 350 to 1280 m.
Distribution: From S Japan, throughout tropical Asia, N Australia and Pacific islands.
Distribution in Timor: Timor-Leste – Aileu, Ainaro, Dili, Ermera, Liquiçá.
Specimens: Timor-Leste – Aileu, c. 3.2 km E by S of Remexio, [8°37′14″ S, 125°41′44″ E], 4 November 2006, *Cowie* 11400 (DNA0185507, n.v.; L.3520492); Asumau, [8°36′51″ S, 125°39′51″ E], 25 September 2016, *Costa et al.* 204 (AVE, L.3959744); [Aileu, 8°43′41″ S, 125°33′59″ E], {Bessilau}, 6 January 1954, *van Steenis* 18683 a (L.3520502, LISC061408); **Ainaro**, roadside from Maubisse to Turiscai, [8°49′22″ S, 125°37′01″ E], 7 April 2017, *Costa et al.* 244 (AVE, L); **Díli**, [Díli, 8°33′31″ S, 125°34′25″ E], {am Berghang oberhalb Timor-Dilly}, 28 April 1938, *Jaag* 66 (L.3520986); **Ermera**, near ancient forest of Mahubo, after old Ermera, [8°44′03″ S, 125°20′20″ E], 19 February 2005, *Paiva, Silveira & Sousa* T 605 (AVE, COI00092272, L.3520493); going towards old Ermera, after descending Mount Mahubo, at Dauhati, [8°45′00″ S, 125°21′16″ E], 19 February 2005, *Paiva, Silveira & Sousa* T 614 (AVE, COI00092270, L.3520494); roadside between Railaco and Gleno, [8°41′03″ S, 125°24′46″ E], 27 August 2016, *Costa et al.* 153 (AVE, L.3959743);

Riheu-Nuno Tali, roadside between Gleno and Ermera, [8°44′47″ S, 125°26′16″ E], 27 August 2016, *Costa et al.* 167 (AVE, L.3959746); **Liquiçá**, roadside between Tibar and Railaco, [8°38′17″ S, 125°27′11″ E], 23 June 2016, *Costa et al.* 20 (AVE, L.3959745); inland from Díli on road to Railako., [8°37′58″ S, 125°27′27″ E], 5 March 2006, *Cowie* 11111 (DNA0177908, n.v.; L.3520902).

Doodia dives Kunze, Bot. Zeitung (Berlin) 6: 144 (1848); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885); Rensch, Hedwigia 74: 240 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 80 (1944); Nooteboom et al. in Fl. Males., Ser. 2, 4: 69 (2012).
Ecology: Terrestrial, in forest, from 910 to 1300 m.
Distribution: Sri Lanka, Malesia (Java, Lesser Sunda Islands, New Guinea), Australia, New Zealand, the Pacific islands east to Hawaii and Easter Island.
Distribution in Timor: West Timor – loc. unknown; Timor-Leste – Manufahi.
Specimens: West Timor – loc. unknown, {Ren Laka'an}, 21 June 1968, *Schmutz* 2241 a (L); **Timor-Leste – Manufahi**, Hosnaco forest, [8°52′35″ S, 125°42′56″ E], 20 May 2017, *Costa et al.* 317 (AVE, L); [Bubususu, 8°54′52″ S, 125°47′00″ E], {camp at Bibiçuçu}, 1883, *Forbes* 3701 (BM, L.3534375); 1883, *Forbes* 3927 (BM, LISU).

****Parablechnum vestitum*** (Blume) Gasper & Salino, Phytotaxa 275(3): 217 (2016).
Ecology: Not mentioned for Timor.
Distribution: Throughout Malesia, in mountainous areas, 700–3350 m.
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Nikiniki, 9°48′49″ S, 124°28′35″ E], {Niki-Niki}, 5 August 1967, *Kooy* 367 (L.3517021).

Cyatheaceae

Alsophila alternans (Hook.) Hook., Syn. Fil. (Hooker & Baker) 41 (1866). — Cyathea alternans (Hook.) C.Presl, Abh. Königl. Böhm. Ges. Wiss. V(5): 347 (1848); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 34 (2002). — *Hemitelia alternans* Hook., Icon. Pl. 7: t.622 (1844).
Ecology: Montane ecosystems, from c. 1500 – 1800m.
Distribution: Peninsular Malaysia, Sumatra, Timor and N Borneo
Distribution in Timor: West Timor – loc. not specified.

Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 76 (BO, n.v.).

***Cyathea* sp.**
Specimens: Timor-Leste – Ermera, going towards old Ermera, after descending Mount Mahubo, at Dauhati, [8°45′00″ S, 125°21′16″ E], 19 February 2005, *Paiva, Silveira & Sousa* T 612 (AVE, COI00091864, L.1259705); **Liquiçá**, Railako to Dili, [8°37′24″ S, 125°28′44″ E], 25 January 2004, *Paiva & Silveira* T 199 (AVE, COI00080450, L.1259706).

Genera inquirenda
Notes: This specimen is very poor and inadequate for identification.
Specimens: Timor-Leste – {without loc.}, 1930, *Alfaro Cardoso* s.n. (LISC061390);

Davalliaceae

Davallia denticulata (Burm.f.) Mett. ex Kuhn, Filic. Afr. 27 (1868); Kuhn, Forschungsr. Gazelle 4(Farne): 12 (1889); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 66 (1944); Nooteboom in Fl. Males., Ser. 2, 3: 250 (1998). **(Figure II.5)**
Ecology: Epiphytic, sometimes terrestrial or lithophytic, in forests or more open habitats, like roadsides or cultivated areas, from 100 to 1580 m.
Distribution: Widespread in the Old World tropics, including southern Africa.
Distribution in Timor: West Timor – Kupang, North Central Timor, South Central Timor; Timor-Leste – Aileu, Ainaro, Díli, Lautém, Liquiça, Manatuto, Manufahi, Viqueque.
Specimens: West Timor – Kupang, [Nonbaun, 9°54′22″ S, 123°54′10″ E], {Nonboen}, s.d., *Teysmann* 16227 (BO, fide Posthumus, not found); [Taimanani Mountains, 9°57′47″ S, 123°36′26″ E], {Taimanani Mts}, 23 May 1875, *Naumann* s.n. (B 20 0044287); [Kupang, 10°10′15″ S, 123°36′25″ E], {Kupang, Vicinity of Aerodrome}, 12 December 1953, *van Steenis* 17979 (L.3524593); [10°10′44″ S, 12°35′50″ E], {Kupang}, 15 May 1875, *Naumann* s.n. (Posthumus 1944: 66); [10°10′44″ S, 123°43′47″ E], {between Kupang and Bovens}, 18 May 1875, *Naumann* s.n. (Posthumus 1944: 66); **North Central Timor**, [Kefamenanu, 9°26′48″ S, 124°28′41″ E], {Kefamenanu, Taekas}, 25 November 1986, *Wiriadinata* 4044 (L.3524584); **South Central Timor**, [Oekiu, 9°56′45″ S, 124°31′09″ E], {Oëkiu}, 24 February 1968, *Kooy* 422 (L.3524577); **Timor-Leste – Aileu**, Dili to Aileu, near Saloi, [8°43′41″ S, 125°33′39″ E], 22 January 2004, *Paiva & Silveira* T 122 b (AVE); **Ainaro**, roadside of Maubisse, [8°49′42″ S, 125°35′54″ E], 8 April 2017, *Costa et al.* 251 (AVE, L); **Díli**, Manucoco, [8°16′04″ S, 125°34′51″ E], 8 August 2016, *Costa et al.* 108 (AVE,

L.3959680); Dare-Fatunaba, [8°35′39″ S, 125°34′00″ E], 5 January 2019, *Costa* 336 (AVE, L); [Díli, 8°33′31″ S, 125°34′25″ E], {"am Berghang oberhalb Timor-Dilly"}, 28 April 1938, *Jaag* 119 (L.3524587); *Jaag* 124 (BO); **Lautém**, from Com to Bauru (Kitchanoko), [8°21′42″ S, 126°54′05″ E], 19 January 2004, *Paiva & Silveira* T 105 (AVE, COI00091841); **Liquiçá**, roadside between Tibar and Faiten, [8°36′59″ S, 125°29′09″ E], 23 June 2016, *Costa et al.* 7 (AVE); **Manatuto**, Soibada, Malushum, [8°51′38″ S, 125°58′52″ E], 25 June 2016, *Costa et al.* 21 (AVE, L.3959679); **Manufahi**, [Turiscai, 8°49′22″ S, 125°42′27″ E], {Turskain}, April 1883, *Forbes* 4072 (BM); **Viqueque**, Waibua forest at foothills of Mundo Perdido Mountain, [8°43′59″ S, 126°22′10″ E], 12 May 2017, *Costa et al.* 302 (AVE, L); **Timor** (loc. not specified) – {without loc.}, s.d., Beddome s.n. (K); s.d., *Anonymous* s.n. (L.3524582).

Davallia divaricata Blume, Enum. Pl. Javae 2: 237 (1828); Nooteboom in Fl. Males., Ser. 2, 3: 252 (1998).
Ecology: Epiphytic or sometimes lithophytic, in forests, from 770 to 1300 m.
Distribution: From India to China, throughout SE Asia to Papua New Guinea and Solomon Islands.
Distribution in Timor: Timor-Leste – Baucau, Bobonaro, Díli, Lautém, Manufahi, Viqueque.
Specimens: Timor-Leste – Baucau, Manu Cailale forest, [8°36′29″ S, 126°22′30″ E], 6 May 2017, *Costa et al.* 284 (AVE, L); **Bobonaro**, Tapó, [9°03′05″ S, 125°16′22″ E], 17 September 2016, *Costa et al.* 183 (AVE, L.3959681); **Díli**, Manucoco, [8°15′52″ S, 125°34′30″ E], 10 August 2016, *Costa et al.* 138 (AVE); **Lautém**, Mount Paitxau Range, near Malahara., [8°28′30″ S, 127°11′34″ E], 1 March 2006, *Cowie* 11039 (DNA0177837, n.v.; L.3522917); **Manufahi**, Hosnaco forest, [8°52′35″ S, 125°42′56″ E], 20 May 2017, *Costa et al.* 315 (AVE, L); **Viqueque**, Dauboruba'a, [8°41′29″ S, 126°23′16″ E], 29 October 2016, *Costa et al.* 226 (AVE, L.3959682).

****Davallia embolostegia*** Copel., Philipp. J. Sci. 1(Suppl. 2): 147, t. 3 (1906).
Ecology: Epiphytic, in forests, c. 770 m.
Distribution: Scattered throughout Malesia: Sumatra, Borneo, Philippines, Moluccas, Timor, and in the Pacific island of Samoa (Savaii Island).
Distribution in Timor: Timor-Leste – Baucau.
Specimens: Timor-Leste – Baucau, Waidede forest, [8°36′41″ S, 126°22′38″ E], 6 May 2017, *Costa et al.* 282 (AVE, L).

****Davallia pentaphylla*** Blume, Enum. Pl. Javae 2: 232 (1828). **(Figure II.6)**
Ecology: Epiphytic, in forests, from 900 to 1100 m.
Distribution in Timor: Timor-Leste – Díli, Viqueque.
Specimens: Timor-Leste – Díli, Manucoco, [8°15'52" S, 125°34'30" E], 10 August 2016, *Costa et al.* 140 (AVE, L.3959677); **Viqueque**, near the base of Mount Laritame, [8°41'42" S, 126°22'42" E], 16 February 2005, *Paiva, Silveira & Sousa* T 565 (AVE, COI00091844, L.3523334).

Davallia repens Kuhn, Filic. Decken.: 27 (1867), nom. cons.; Nooteboom in Fl. Males., Ser. 2, 3: 259 – 261 (1998).
Davallia pedata Sm., Mém. Acad. Roy. Sci. (Turin) 5: 415 (1793), nom. illeg. superfl.; Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 349 (1834).
Humata repens (L.f.) Diels, Nat. Pfl. 1(4): 209 (1899); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 65 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 43 (2002).
Ecology: Epiphytic, from 1500 to 2000 m.
Distribution: Occurs in W tropical Africa (Cameroun, Gabon), Indian Ocean islands, and from Sri Lanka and India, throughout China, Japan, and southwards through SE Asia to NE Australia, Melanesia and W central Polynesia.
Distribution in Timor: West Timor – Belu, South Central Timor.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 70, 93, 95 (BO, n.v.); **Belu**, [Mount Lakaan, 9°06'24" S, 125°03'41" E], {Rèn Laka'an}, 21 June 1968, *Schmutz* 2266 (L.3536193); 21 June 1968, *Schmutz* 2267 (L.3536194); **South Central Timor**, [Nuaf Nefomasi, 9°33'38" S, 124°13'48" E], {Moetis}, 15 November 1935, *De Voog* 2351 (BO); **Timor** (loc. not specified) – {without loc.}, s.d., *Guichenot* s.n. (P00526900).

Davallia solida (G.Forst.) Sw., J. Bot. (Schrader) 1800(2): 87 (1801); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 35 (2002).
Ecology: Epiphytic, in forests and savannas, from 200 to 1600 m.
Distribution: From tropical continental Asia, throughout SE Asia to E Australia and Polynesia.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Díli, Lautém.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 49, 57, 74 (BO, n.v.); **Timor-Leste – Díli**, Manucoco, [8°15'52" S, 125°34'30" E], 10 August 2016, *Costa et al.* 139 (AVE, L.3959678); Atauro Island, crest of Mount Manucoco ridge., [8°16'10" S, 125°34'27"

E], 19 May 2015, *Cowie & Santana* 13844 (DNA0270301, n.v.); **Lautém**, c. 10 km SSW of Tutuala, [8°23'37" S, 127°15'26" E], 19 October 2006, *Cowie* 11427 (DNA0189058, n.v.).

Davallia trichomanoides Blume, Enum. Pl. Javae 2: 238 (1828); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 67 (1944); Nooteboom in Fl. Males., Ser. 2, 3: 264 – 265 (1998); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 36 (2002).
Ecology: Epiphytic, in forests, sometimes lithophytic on limestone, from 1200 to 1700 m.
Distribution: From Sri Lanka and Himalayas, through Indochina to Korea and Japan, and southwards to Malesia.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Ermera, Viqueque.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33'38" S, 124°13'48" E], {without loc., but the altitude given-1700 m-should be Mount Mutis}, s.d., *Ruma* 68 (BO, n.v.); [Kapan, 9°44'05" S, 124°16'26" E], {rain forest Nasimitan, ± 6 km south of Kapan.}, 14 March 1939, *Bloembergen* 3471 (BM, L.3535247); **Timor-Leste – Ermera**, [Ermera, 8°45'08" S, 125°23'49" E], {Ermera}, s.d., *Newton* s.n. (K); **Viqueque**, Mount Mundo Perdido, [8°42'45" S, 126°20'25" E], 16 February 2005, *Paiva, Silveira & Sousa* T 529 (AVE, COI00091843, L.3535508); [Mount Mundo Perdido, 8°43'16" S, 126°19'56" E], {Mt Perdido (ascent of Ossu)}, 23 December 1953, *van Steenis* 18310 (BM, L.3535267).

****Davallia viscidula*** (Mett.) Alderw., Linneaa 36: 145 (1869).
Ecology: Lithophytic, roadside, c. 1430 m.
Distribution: Thailand, Sumatra, Java, Borneo, Bali, SW Sulawesi, Timor and New Guinea.
Distribution in Timor: Timor-Leste – Aileu.
Specimens: Timor-Leste – Aileu, roadside between Aileu and Maubisse, [8°48'16" S, 125°35'31" E], 7 April 2017, *Costa et al.* 240 (AVE, L).

***Davallia* sp.**
Specimens: Timor-Leste – {without loc.}, 1930, *Alfaro Cardoso* s.n. (LISC061411).

Dennstaedtiaceae

Dennstaedtia scandens (Blume) Moore, Parker's Cat. (1858); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 33 (2002).

Ecology: Montane habitats, from 1500– 1700 m.
Distribution: Lesser Sunda Islands, Moluccas, Taiwan, Philippines, Sulawesi, New Guinea, Society Islands and Solomon Islands.
Distribution in Timor: West Timor – loc. not specified.
Specimens: {without loc.}, s.d., *Ruma* 81, 111 (BO, n.v.).

****Hypolepis punctata*** (Thunb.) Mett., Filic. Afr.: 120 (1868).
Ecology: Terrestrial, c. 1280 m.
Distribution: Tropical America, Sri Lanka, Indochina (except Myanmar), Malaysia, Philippines, Korea, Japan S China, Taiwan, Australia.
Distribution in Timor: Timor-Leste – Ermera.
Specimens: Timor-Leste – Ermera, going towards old Ermera, after descending Mount Mahubo, at Dauhati, [8°45'00" S, 125°21'16" E], 19 February 2005, *Paiva, Silveira & Sousa* T 613 (AVE, COI00080482, L.3557669).

Hypolepis tenuifolia (G.Forst.) Bernh., Neues J. Bot. 1(2): 34 (1806); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 83– 84 (1944).
Ecology: Stream bed, in a serpentine outcrop, c. 170 m.
Distribution: From S Japan, S China, Taiwan, through Philippines and Indonesia, to E Australia and Polynesia.
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33'38" S, 124°13'48" E], {Fetin}, 10 April 1935, *Forest officer Kupang* 14 (BO).

***Hypolepis* sp.**
Specimens: Timor-Leste – Viqueque, Mundo Perdido, c. 33 km SSW of Baucau, [8°43'16" S, 126°19'56" E], 28 September 2006, *Pinto & Santana* 47 (DNA0193419, n.v.); 28 September 2006, *Pinto & Santana* 75 (DNA0193429, n.v.).

Microlepia speluncae (L.) T.Moore, Index Fil., fasc. 2: xciii (1857); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 68 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 45 (2002). **(Figure II.7)**
Ecology: Terrestrial, in semi-evergreen closed forest, coffee plantations and forest roadsides, from 400 to 1600 m.
Distribution: Pantropical.

Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Ainaro, Díli, Ermera, Lautém, Manatuto, Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 83 (BO, n.v); **Timor-Leste** – **Ainaro**, near Ainaro, Suro Craic, [8°59′49″ S, 125°30′18″ E], 23 January 2004, *Paiva & Silveira* T 152 (AVE, COI00080471); **Díli**, roadside between Fatunaba and Dare, [8°35′49″ S, 125°34′26″ E], 22 July 2016, *Costa et al*. 76 (AVE, L.3959633); Manucoco, [8°16′18″ S, 125°35′09″ E], 7 August 2016, *Costa et al.* 92 (AVE, L.3959642); [Fatunaba, 8°35′47″ S, 125°34′34″ E], {Fatunaba hills}, s.d., *Forbes* 4003 (Posthumus 1944: 68); **Ermera**, roadside between Gleno and Ermera, [8°44′55″ S, 125°26′18″ E], 27 August 2016, *Costa et al*. 162 (AVE, L.3959632); **Lautém**, Mehara area, near Los Palos, [8°27′47″ S, 127°10′33″ E], 2 October 2005, *Cowie & Xavier* 10709 (DNA0176983, n.v.; L.3568142); Mount Paitxau Range, near Malahara, [8°28′33″ S, 127°10′31″ E], 2 March 2006, *Cowie* 11077 (DNA0177874, n.v.; L3568141); **Manatuto**, Soibada, Malushum, [8°51′38″ S, 125°58′52″ E], 25 June 2016, *Costa et al*. 31 (AVE, L.3959634); **Viqueque**, roadside of Logo-Bere, [8°42′59″ S, 126°21′58″ E], 12 May 2017, *Costa et al*. 311 (AVE, L); **Timor** – {without loc.}, s.d., *Teysmann* 14677 (L.3568144, L.3568145).

Microlepia strigosa (Thunb.) C.Presl, Epimel. Bot.: 95 (1851); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 69 (1944).
Ecology: Terrestrial, in forests, from 900 to 1700 m.
Distribution: Himalayas and Sri Lanka through China and Japan, southwards through SE Asia to Polynesia.
Distribution in Timor: Timor-Leste – Díli, Viqueque.
Specimens: Timor-Leste – Díli, Manucoco, [8°15′52″ S, 125°34′30″ E], 8 August 2016, *Costa et al*. 133 (AVE, L.3959635); [Fatunaba, 8°35′47″ S, 125°34′34″ E], {Fatunaba hills}, s.d., *Forbes* 4062 (Posthumus 1944: 69); **Viqueque**, [Mount Mundo Perdido, 8°43′16″ S, 126°19′56″ E], {Mt Perdido (ascent of Ossu)}, 23 December 1953, *van Steenis* 18296 (L.3567959, LISC061412).

Pteridium aquilinum (L.) Kuhn in Kersten, Reis. Ost-Afr. 3(3): 11 (1879); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 92 (1944).
Ecology: Not mentioned for Timor, but recorded as terrestrial in damp degraded habitats in Australia.
Distribution: Cosmopolitan.
Distribution in Timor: Timor-Leste – Díli.

Specimens: Timor-Leste – Díli, [Díli, 8°33′14″ S, 125°34′42″ E], {Am Bergkang oberhalf Timor-Dilly}, 28 April 1938, *Jaag* 113 (L.3605174).

Pteridium revolutum (Blume) Nakai, Bot. Mag. (Tokyo) 39: 109 (1925).
Ecology: One specimen mentions banks of a mountain stream, on a damp slope, and recorded as terrestrial in pasture, on hillsides, on forest margins and in open eucalypt in Australia.
Distribution: From India and Sri Lanka, through S China, Taiwan, SE Asia, New Guinea and N Australia.
Distribution in Timor: Timor-Leste – Aileu.
Specimens: Timor-Leste – Aileu, c. 3.2 km E by S of Remexio, [8°36′52″ S, 125°39′54″ E], 4 November 2006, *Cowie* 11398 (DNA0185504, n.v.); **Ainaro**, Maubisse-Hato Builico, [8°52′53″ S, 125°31′44″ E], 10 February 2005, *Paiva, Silveira & Sousa* T 396 (AVE, COI00080455, L.3589624).

Dicksoniaceae

Calochlaena javanica (Blume) M.D.Turner & R.A.White, Amer. Fern J. 78(3): 93 (1988). — *Culcita javanica* (Blume) Maxon, J. Wash. Acad. Sci. 12: 456 (1922); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 48 (1944). — *Dicksonia javanica* Blume, Enum. Pl. Javae 2: 240 (1828).
Ecology: Terrestrial, sometimes on limestone, in forests, roadsides and in coffee plantations, from 870 to 1240 m.
Distribution: Philippines, Borneo, Java, Lesser Sunda Islands (Bali, Lombok, Flores, Timor), New Guinea.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Aileu, Ainaro.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Mt Moetis}, 15 November 1935, *De Voog* 2355 (in BO fide Posthumus; not found); **Timor-Leste – Aileu**, Fatukhun, [8°38′06″ S, 125°36′45″ E], 17 January 2004, *Paiva & Silveira* T 49 (AVE, COI00092271, L.1284948); Talitu, [8°36′41″ S, 125°36′51″ E], 2 July 2016, *Costa et al.* 71 (AVE, L); **Ainaro**, roadside from Maubisse to Turiscai, [8°49′22″ S, 125°37′01″ E], 7 April 2017, *Costa et al.* 245 (AVE, L.3959675).

Dicksonia timorensis Adjie, Reinwardtia 13(4): 360 (2012).
Ecology: Upper montane forest, shaded area, in a valley between two ridges separated by a creek, c. 1760 m.

Distribution: Endemic to Timor.
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33'38" S, 124°13'48" E], {Mutis Nature Reserve, Bukit Lelofui}, s.d., *Adjie* 653 (holotype at the Herbarium of Bali Botanic Garden, n.v.; isotypes at BO, n.v., and K, K001325403– 10 photos).

Dryopteridaceae

****Arachniodes amabilis*** (Blume) Tindale, Contr. New South Wales Natl. Herb. 3: 90 (1961).
Ecology: Terrestrial, sometimes lithophytic, in forests, or near springs, from 900 to 1280 m.
Distribution: S India and Sri Lanka, Nepal, through China to Korea and Japan, southwards through Philippines and Indonesia.
Distribution in Timor: Timor-Leste – Aileu, Díli, Ermera.
Specimens: Timor-Leste – Aileu, Asumau, [8°36'59" S, 125°39'42" E], 25 September 2016, *Costa et al.* 206 (AVE, L.3959651); **Díli**, Manucoco, [8°15'52" S, 125°34'30" E], 8 August 2016, *Costa et al.* 131 a (AVE, L.3959652); **Ermera**, near ancient forest of Mahubo, after old Ermera, [8°44'03" S, 125°20'20" E], 19 February 2005, *Paiva, Silveira & Sousa* T 604 (AVE, COI00091848, L.3502135).

Arachniodes aristata (G.Forst.) Tindale, Contr. New South Wales Natl. Herb. 3: 89 (1961). — *Aspidium aristatum* (G.Forst.) Sw., J. Bot.(Schrader) 1800(2): 37 (1801); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885). — *Polystichum aristatum* (G.Forst.) C.Presl, Tent. Pterid.: 83 (1836); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 59 (1944).
Ecology: Grassy slope, in a remnant montane forest patch dominated by *Dacrycarpus imbricatus*, from 840 to 1200 m.
Distribution: S India, Sri Lanka, Himalayas, China to Japan, southwards through Taiwan, SE Asia, E Australia and Pacific islands.
Distribution in Timor – Timor-Leste – Aileu, Díli, Lautém, Manufahi, Viqueque.
Specimens: Timor-Leste – Aileu, [Besilau, 8°38'19" S, 125°35'25" E], {Bessilau, S. of **Dili**}, 3 January 1954, *van Steenis* 18357 (BM, L.3592051); **Díli**, Atauro Island, eastern slopes of Mount Manucoco, [8°16'10" S, 125°34'27" E], 13 May 2015, *Cowie & Santana*

13765 (DNA0269604, n.v.); **Lautém**, Mount Paitxau Range, near Malahara., [8°28'33" S, 127°10'31" E], 28 February 2006, *Cowie* 11021 (DNA0177799, n.v.; L.3494293); **Manufahi**, [Bubususu, 8°54'52" S, 125°47'00" E], {Bibiçuçu}, 1883, *Forbes* 3606 (BO, BM, L.3494390); **Viqueque**, Mundo Perdido, c. 33 km SSW of Baucau, [8°43'16" S, 126°19'56" E], 28 September 2006, *Pinto & Santana* 57 (DNA0193426, n.v.; L.3494394).

****Bolbitis quoyana*** (Gaudich.) Ching in Christensen, Index Filic., Suppl. Tert.: 49 (1934).
Ecology: Not mentioned for Timor, but recorded from lowland rain forests, and up to 500 m in Australia.
Distribution: Mostly from Philippines and Indonesia to NE Australia and Melanesia.
Distribution in Timor: Timor-Leste – Díli, Lautém.
Specimens: Timor-Leste – Díli, Atauro Island, northern slopes of Mount Manucoco, [8°16'10" S, 125°34'27" E], 19 May 2015, *Cowie & Santana* 13822 (DNA0270307, n.v.); **Lautém**, Mount Paixtau Range, near Malahara, [8°28'33" S, 12°10'31" E], 28 February 2006, *Cowie* 11024 (DNA0177802, n.v.; L.3515764).

****Bolbitis repanda*** (Blume) Schott, Gen. Fil.: ad t.14 (1834).
Ecology: Terrestrial, in forests, or roadsides of coffee plantations, from c. 840 to 850 m.
Distribution: Thailand, Philippines, Sumatra, Borneo, Celebes, Java, and Lesser Sunda Islands (Bali to Flores and Timor).
Distribution in Timor: Timor-Leste – Díli, Ermera.
Notes: Hennipman (1978: 329), within the Lesser Sunda Islands, only reported "from Bali to Flores". So, since we are aware of no other records besides Costa's specimens, this seems to be a new record for Timor.
Specimens: Timor-Leste – Díli, Manucoco, [8°15'52" S, 125°34'35" E], 8 August 2016, *Costa et al.* 126 (AVE, L.3959742); **Ermera**, roadside between Gleno and Ermera, [8°44'47" S, 125°26'16" E], 28 August 2016, *Costa et al.* 169 (AVE, L.3959722).

Ctenitis vilis (Kunze) Ching, Bull. Fan Mem. Inst. Biol. 8: 290 (1938); Holttum in Fl. Males., Ser. 2, 2(1): 30 (1991); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 33 (2002). — *Dryopteris vilis* (Kunze) Kuntze, Revis. Gen. Pl. 2: 814 (1891); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 53 (1944).
Ecology: In West Timor it was recorded from mixed tropical monsoon forest, c. 600 m. No data available for Timor-Leste.

Distribution: Malesia.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – loc. not specified.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 36, 41a, 41b (BO, n.v.); **Timor-Leste** – {without loc.}, s.d., *Forbes* 3682 (Posthumus 1944: 53).
Obs: There is a duplicate of Forbes 3682 at L (L.2301897) which is *Cardiospermum halicacabum* L., so the citation by Posthumus, above, should be considered carefully.

Dryopteris adnata (Blume) Alderw., Malayan Ferns: 191 (1909); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 50 (1944).
Ecology: Terrestrial, in *Eucalyptus* forest, c. 200 m.
Distribution: Sumatra, Java, Borneo, Sulawesi, Lesser Sunda Islands (Timor).
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33'38" S, 124°13'48" E], {Mt. Moetis}, 15 November 1935, *De Voog* 2344 (BO, fide Posthumus, not found).

Dryopteris cochleata (D.Don) C.Chr., Index Filic.: 258 (1905); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 50 (1944). **(Figure II.9)**
Ecology: Terrestrial, on roadsides, from 200 to 1570 m.
Distribution: S India, Himalayas, S China, Indochina, Philippines and Indonesia.
Distribution in Timor: West Timor – Kupang, Belu; Timor-Leste – Ainaro, Ermera.
Specimens: West Timor – Kupang, [Taimanani Mountains, 9°57'47" S, 123°47'24" E], {Taimanani Mts}, 24 May 1875, *Naumann* s.n. (in B fide Posthumus, not found); **Belu**, [Mount Lakaan, 9°06'24" S, 125°03'41" E], {Rèn Laka'an}, 21 June 1968, *Schmutz* 2246 (L.3539030); **Timor-Leste – Ainaro**, roadside from Maubisse to Turiscai, [8°48'38" S, 125°39'07" E], 7 April 2017, *Costa et al.* 248 (AVE, L); **Ermera**, roadside between Gleno and Ermera, [8°44'47" S, 125°26'16" E], 28 August 2016, *Costa et al.* 170 (AVE, L.3959689).

****Dryopteris hirtipes*** (Blume) Kuntze, Revis. Gen. Pl. 2: 813 (1891).
Ecology: Damp slope, c. 2060 m.
Distribution: India and Sri Lanka, S China and Taiwan, throughout SE Asia to central Polynesia.
Distribution in Timor: Timor-Leste – Ainaro.
Specimens: Timor-Leste – Ainaro, Maubisse-Hato Builico, [8°52'53" S, 125°31'44" E], 10 February 2005, *Paiva, Silveira & Sousa* T 384 (AVE, COI00091846, L.3552710).

***Dryopteris* sp.**
Specimens: Timor-Leste – Ainaro, Hato Builico [8°53′37″ S, 125°31′07″ E], terrestrial fern, banks of a mountain stream, on a damp slope, 17 January 2004, *Paiva & Silveira* T 58 (AVE, COI00080474, L.3555037); Maubisse-Hato Builico, [8°52′53″ S, 125°31′44″ E], 10 February 2005, *Paiva, Silveira & Sousa* T 381 (AVE, COI00080437, L.3555038).

Elaphoglossum angulatum (Blume) T.Moore, Index Fil., fasc. 3: 5 (1857); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 107– 108 (1944).
Ecology: Not mentioned for Timor, but recorded from primary rain- and eucalyptus forest, on trees, based on Bali and/or Flores specimens by Posthumus (loc. cit.), and as terrestrial or lithophytic, from 1600 to 2400 m in China.
Distribution: E tropical Africa, Madagascar, La Reunion, S India, Sri Lanka, Vietnam, Taiwan, Malesia and New Guinea.
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Mt Moetis}, 15 November 1935, *De Voog* 2347 (in BO fide Posthumus, not found).

***Elaphoglossum* sp.**
Specimens: Timor-Leste – Ainaro, [Suro, 9°01′30″ S, 125°31′30″ E], {Suro, Huati Builico, faldas do Tata-Mailau}, s.d., *Cinatti* II 53 (LISC061394).

****Lastreopsis tenera*** (R.Br.) Tindale, Vict. Naturalist 73: 181 (1957). **(Figure II.8)**
Ecology: Terrestrial or lithophytic, in forests, from 850 to 910 m.
Distribution: India, Sri Lanka, Taiwan, Malaysia, Philippines, Indonesia, NE Australia, and New Caledonia.
Distribution in Timor: Timor-Leste – Díli.
Specimens: Timor-Leste – Díli, Manucoco, [8°15′52″ S, 125°34′35″ E], 8 August 2016, *Costa et al.* 124 (AVE, L.3959691); [8°15′52″ S, 125°34′30″ E], 10 August 2016, *Costa et al.* 141 (AVE).

Parapolystichum rufescens (Blume) Labiak, Sundue & R.C.Moran, Brittonia 67(1): 84 (2014). — *Dryopteris rufescens* (Blume) C.Chr., Index Filic. 290 (1905); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 52 (1944).
Ecology: Not mentioned in the single known specimen from Timor, but stated as

occurring in primary forest, as terrestrial, by Posthumus (loc. cit.), for Bali, Lombok and/or Flores.
Distribution: Sri Lanka, Java, Lesser Sunda Islands (Bali, Lombok, Flores, Timor), Australia (E Queensland), New Caledonia.
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33'38" S, 124°13'48" E], {Mount Mutis}, 15 November 1935, *De Voog* 2354 (BO, fide Posthumus, not found).

****Pleocnemia irregularis*** (C.Presl) Holttum, Kew Bull. 29(2): 347 (1974).
Ecology: Not mentioned for Timor, but recorded from lowland forest elsewhere in Malesia.
Distribution: Thailand, Cambodia, throughout Malesia to Fiji.
Distribution in Timor: Timor-Leste – Lautém.
Specimens: Timor-Leste – Lautém, Mount Paitxau Range, near Malahara, [8°28'33" S, 127°10'31" E], 2 March 2006, *Cowie* 11065 (DNA0177862, n.v.; L.3595672).

Pleocnemia olivacea (Copel.) Holttum, Holttum, Reinwardtia 1: 181, f.8,10 (1951); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 49 (2002).
Ecology: Mixed tropical monsoon forest, c. 600 m.
Distribution: Malaysia, Sumatra, Borneo, ?Java, Lesser Sunda Islands (Timor) and Moluccas (Ambon, Seram)
Distribution in Timor: West Timor – loc. not specified.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 19 (BO, n.v.).

Polystichum biaristatum (Blume) T.Moore, Index Fil., fasc. 5: 86 (1858– 1860); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 59– 60 (1944).
Aspidium aculeatum auct. non Sw.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885).
Ecology: Terrestrial, on roadsides, damp slopes, forests, from 910 to 2060 m.
Distribution: Sri Lanka, N India, S China, Taiwan, Myanmar, Thailand, Vietnam, Philippines, Borneo, Java, Sulawesi, Timor.
Distribution in Timor: Timor-Leste – Ainaro, Manufahi, Viqueque.
Specimens: Timor-Leste – Ainaro, Maubisse-Hato Builico, [8°52'53" S, 125°31'44" E], 10 February 2005, *Paiva, Silveira & Sousa* T 382 (AVE, COI00091845, L.3585972); track

to the top of Ramelau, [8°52′37″ S, 125°35′04″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 421 (AVE, COI00091847, L.3585971); roadside from Maubisse to Turiscai, [8°49′01″ S, 125°40′53″ E], 7 April 2017, *Costa et al.* 247 (AVE, L); **Manufahi**, Hosnaco forest, [8°52′35″ S, 125°42′56″ E], 20 May 2017, *Costa et al.* 318 (AVE, L); [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibisoesoe}, 1883, *Forbes* 3926 (BM); {Bibiçuçu}, 1883, *Forbes* 3949 (BM); **Viqueque**, [Mount Mundo Perdido, 8°43′16″ S, 126°19′56″ E], {Mt Perdido (ascent of Ossu)}, 23 December 1953, *van Steenis* 18295 (BM, L.3588933, LISC061413).

****Polystichum mucronifolium*** (Blume) C.Presl, Epimel. Bot.: 55 (1851).
Ecology: Not mentioned for Timor, but recorded from forests, streamsides on brown soils; 1600-2400 m, in China.
Distribution: Sri Lanka, NE and S India, E Nepal, N Myanmar, Thailand, Vietnam, Taiwan, S Philippines, Sumatra, Borneo, Java, Sulawesi, Lesser Sunda Islands (Flores, Timor), Moluccas (Ambon).
Distribution in Timor: Timor-Leste – Ainaro.
Specimens: Timor-Leste – Ainaro, [Mount Tata Mailau, 8°54′14″ S, 125°29′21″ E], {Mt Tatamailau}, 5 January 1954, *van Steenis* 18466 (L.3587712).

***Polystichum* sp.**
Specimens: Timor-Leste – Viqueque, Mundo Perdido, c. 33 km SSW of Baucau, [8°43′16″ S, 126°19′56″ E], 28 September 2006, *Pinto & Santana* 77 (DNA0193432, n.v.).

Rumohra adiantiformis (G.Forst.) Ching, Sinensia 5: 70 (1934). — *Polystichum adiantiforme* (G.Forst.) J.Sm., Hist. Fil.: 220 (1875); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 59 (1944).
Aspidium coriaceum auct. non Sw.: Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 347 (1834).
Ecology: Not mentioned for Timor, but recorded as epiphytic, lithophytic or occasionally as terrestrial, in moist to wet forests in Australia.
Distribution: W North America, the Caribbean, South America, southern Africa, the Western Indian Ocean islands, Papua New Guinea and Australasia. Occasional in Taiwan, continental Malaysia and Timor.
Distribution in Timor: Not specified.
Specimens: Timor (loc. not specified) – {without loc.}, s.d., *Guichenot* s.n. (P00526906).

Equisetaceae

Equisetum ramosissimum Desf., Fl. Atlant. 2: 398 (1799).
Equisetum ramosissimum Desf. subsp. *debile* (Roxb. ex Vaucher) Hauke, Amer. Fern J. 52(1): 33 (1962); Laferrière in Fl. Males., Ser. 2, 3: 287 (1998). — *Equisetum debile* Roxb. ex Vaucher, Mém. Soc. Phys. Genève 1: 387 (1822); Rensch, Hedwigia 74: 252 (1934).
Equisetum timorianum Vauch., Mém. Soc. Phys. Genève 1: 376, t.X, f.3&4 (1822); Alderw., Malayan Fern Allies: 17 (1915).
Ecology: Terrestrial, common in many damp places and along watercourses, from 400 to 1300 m.
Distribution: Africa, Europe, C and SE Asia to the Pacific islands, excluding Australia.
Distribution in Timor: West Timor – Belu, Kupang, South Central Timor; Timor-Leste – Ainaro, Manatuto.
Specimens: West Timor – Belu, [Leowalu, 9°05′56″ S, 125°07′36″ E], {Leowalu (Lamaknen)}, 13 July 1966, *Friedberg* 368 (LISC061395); **Kupang**, [Bioba, 9°35′ S, 123°55′ E], {village of Bioba, Mount Timau, W. slope}, 4 March 1939, *Bloembergen* 3365 (BO, L.3479708); [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Moetisgebirge}, 18 February 1932, *Stein* 792 (Rench 1932: 252); **South Central Timor**, [Soe, 9°52′ S, 124°17′ E], {Soe}, 13 February 1929, *Walsh* 105 (BO); [Basmuti, 10°00′37″ S, 124°24′51″ E], {Kona Bau, Basmuti}, 12 October 1986, *Niniek* 851 (BO); **Timor-Leste** – {without loc.}, March 1882, *Forbes* 3575 (BO,L.3479713, LISU); **Ainaro**, Ramelau, [8°53′37″ S, 125°31′07″ E], 30 April 1932, *Stein* 1153 (Rench 1932: 252); [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Mt Tatamailau}, 4 January 1954, *van Steenis* 18392 (L.3479706, LISC061396); **Manatuto**, edge of the river of Makinur, [8°44′42″ S, 125°55′07″ E], 8 December 2017, *Costa et al.* 323 (AVE, L); **Timor** (loc. not specified) – {without loc.}, s.d., Anonymous s.n. (L); s.d., Anonymous s.n. (P01568934).

Gleicheniaceae

Dicranopteris linearis (Burm.f.) Underw., Bull. Torrey Bot. Club. 34: 250 (1907); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 109 (1944); Holttum in Fl. Males., Ser. 2, 1(1): 33– 34 (1959). — *Gleichenia linearis* (Burm.f.) C.B.Clarke, Trans. Linn. Soc. London, Bot. 1(7): 428 (1880); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 109 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 42 (2002).

Gleichenia dichotoma auct. non (Willd.) Hook.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885).
Ecology: Terrestrial, thicket-forming fern, on roadsides and on bare, badly eroded soils in *Eucalyptus alba* forest, just marking the zone of daily cloudbanks, from 590 to 1800 m.
Distribution: Tropical and subtropical regions of the Old World, extending to temperate regions north to central Japan and south to E Australia and New Zealand North island. Invasive in the New World.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Aileu, Díli, Ermera, Liquiça.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 88a, 88b, 92 (BO, n.v.); **Timor-Leste – Aileu**, Fatukhun, [8°38'06" S, 125°36'45" E], 17 January 2004, *Paiva & Silveira* T 48 a (AVE); road Aileu-Dili, [8°41'44" S, 125°33'26" E], 11 February 2005, *Paiva, Silveira & Sousa* T 471 (AVE, COI00092262, L.3537275); road Aileu-Dili, [8°38'03" S, 125°36'58" E], 11 February 2005, *Paiva, Silveira & Sousa* T 478 (AVE, COI00092264, L.3537274); [Besilau, 8°38'19" S, 125°35'25" E], {Bessilau, S. of Dili}, 3 January 1954, *van Steenis* 18360 (BM, L.3537828); **Díli**, [Fatunaba, 8°35'47" S, 125°34'34" E], {Fatunaba hills}, 12 March 1883, *Forbes* 3481 (BM); **Ermera**, going towards old Ermera, after descending Mount Mahubo, at Dauhati, [8°45'00" S, 125°21'16" E], 19 February 2005, *Paiva, Silveira & Sousa* T 617 (AVE, COI00092263, L.3537276); roadside between Gleno and Ermera, [8°44'47" S, 125°26'16" E], 28 August 2016, *Costa et al.* 171 (AVE, L.3959741); **Liquiçá**, roadside between Faiten and Railaco, [8°38'17" S, 125°27'11" E], 23 June 2016, *Costa et al.* 19 (AVE, L.3959740); inland from Dili on road to Railako, [8°37'58" S, 125°27'27" E], 5 March 2006, *Cowie* 11112 (DNA0177909, n.v.; L.3537825).

Sticherus truncatus (Willd.) Nakai, Bull. Natl. Sci. Mus. Tokyo 29: 30 (1950). — *Gleichenia truncata* (Willd.) Spreng., Syst. Veg., ed. 16, 4(1): 25 (1827); Holttum in Fl. Males., Ser. 2, 1(1): 21– 22 (1959). — *Mertensia truncata* Willd., Kongl. Vetensk. Acad. Nya Handl. 25: 169, t.5, f.A (1804).
Ecology: Terrestrial, scrambling, thicket-forming fern, from 1230 to 1290 m.
Distribution: Sri Lanka, China, and scattered throughout SE Asia, reaching Papua New Guinea.
Distribution in Timor: Timor-Leste – Aileu, Ermera.
Specimens: Timor-Leste – Aileu, Fatukhun, [8°38'06" S, 125°36'45" E], 17 January 2004, *Paiva & Silveira* T 48 b (AVE, L.3555760,); **Ermera**, going towards old Ermera,

after descending MountMount Mahubo, at Dauhati, [8°45′00″ S, 125°21′16″ E], 19 February 2005, *Paiva, Silveira & Sousa* T 615 (AVE, COI00099898, L.3555759).

Hymenophyllaceae

Abrodictyum obscurum (Blume) Ebihara & K.Iwats., Blumea 51(2): 244 (2006). — *Trichomanes obscurum* Blume, Enum. Pl. Javae 2: 227 (1828); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 45– 46 (1944).
Trichomanes cupressoides auct. non Desv.: Rosenstock, Bull. Jard. Bot. Buitenzorg, Sér. 2, 2: 28 (1911).
Trichomanes rigidum auct. non Sw.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885).
Ecology: Terrestrial, on clayey volcanic soil on banks, in ravines in deep shade, from 510 to 750 m.
Distribution: Tropical and subtropical regions of Asia, extending to temperate regions north to central Japan and south to E Australia and New Zealand.
Distribution in Timor: Timor-Leste – Díli.
Specimens: Timor-Leste – Díli, [Fatunaba, 8°35′47″ S, 125°34′34″ E], {Fatunaba hills}, 25 March 1883, *Forbes* 3475 (BO, L.3647400, LISU).

Crepidomanes bipunctatum (Poir.) Copel., Philipp. J. Sci. 67: 59 (1938); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 44 (1944).
Trichomanes bilabiatum Nees & Blume, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 11: 123, t.13, f.2 (1823), nom. illeg. superfl.; Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 44– 45 (1944).
Ecology: Epiphytic on trunks of *Podocarpus* in damp montane rain forest, c. 1700 m.
Distribution: Tropical and subtropical Asia, extending to Madagascar and Indian Ocean islands.
Distribution in Timor: Timor-Leste – Lautém, Viqueque.
Specimens: Timor-Leste – Lautém, Legumau, 26 km WSW of Los Palos, [8°33′45″ S, 126°45′54″ E], 18 October 2005, *Trainor* 9 (DNA0178409, n.v.; L.3726897); **Viqueque**, [Mount Mundo Perdido, 8°43′16″ S, 126°19′56″ E], {Mt Perdido (ascent of Ossu)}, 23 December 1953, *van Steenis* 18289 (BO, L.3519243, LISC061414); **Timor** (loc. not specified) – {without loc.}, s.d., *Gaudichaud* s.n. (Posthumus 1944: 44); {without loc.}, s.d., *Anonymous* s.n. (Posthumus 1944: 44).

Crepidomanes saxifragoides (C.Presl) P.S.Green, Kew Bull. 48(3): 618 (1993). — *Trichomanes saxifragoides* C.Presl, Hymenophyllaceae 16, 39 (1843); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885).
Ecology: Terrestrial, on river banks, c. 1070 m.
Distribution: Tropical Asia to the E coast of Australia.
Distribution in Timor: Timor-Leste – Manufahi.
Specimens: Timor-Leste – Manufahi, [Turiscai, 8°49′22″ S, 125°42′27″ E], {Turskain}, 3 April 1883, *Forbes* 3946 (BM).

Crepidomanes minutum (Blume) K.Iwats., J. Fac. Sci. Univ. Tokyo, Sect. 3, Bot. 13(5): 524 (1985).
Trichomanes gracile Bosch, Ned. Kruidk. Arch. 5(2): 157 (1861); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 57 (2002).
Ecology: Montane habitats, in shaded places, c. 1800 m.
Distribution: Java and Lesser Sunda Islands (Timor)
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 104, 113 (BO, n.v.).

Hymenophyllum polyanthos (Sw.) Sw., J. Bot. (Schrader) 1800(2): 102 (1801).
Ecology: Not mentioned for Timor, but recorded as epiphytic or lithophytic in light or deep shade, common at medium or higher altitudes, in Thailand, Laos and Cambodia, and as occurring near streams and in forests in Brunei Darussalam (Cicuzza *et al*. 2025).
Distribution: Tropics or subtropics throughout the world, in the eastern hemisphere extending north to central Japan and south to New Zealand (North Island).
Distribution in Timor: Timor-Leste – Viqueque.
Specimens: Timor-Leste – Viqueque, Mundo Perdido, c. 33 km SSW of Baucau, [8°43′16″ S, 126°19′56″ E], 29 September 2006, *Pinto & Trainor* 95 (DNA0193440, n.v.; L.3726066).

Hypodematiaceae

Hypodematium phegopteroideum Kuhn, Forschungsr. Gazelle 4(Farne): 8 (1889). — *Dryopteris phegopteroidea* (Kuhn) C.Chr., Index Filic. 284 (1905).

Dryopteris crenata auct. non (Forssk.) Kuntze, Revis. Gen. Pl. 2: 811 (1891); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 51 (1944)
Ecology: In rocks.
Distribution: Endemic of West Timor.
Distribution in Timor: West Timor – Kupang.
Specimens: West Timor – Kupang, [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Taimanani Mts}, 24 May 1875, *Naumann* s.n. (B200063519, type of *Hypodematium phegopteroideum* Kuhn).

Leucostegia immersa C.Presl, Tent. Pterid.: 95, t.4, f.11 (1836), nom. cons.; Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 66 (1944); Nooteboom in Fl. Males., Ser. 2, 4: 89– 91 (1998).
Humata immersa var. *minuta* Alderw., Malayan Ferns: 230 (1909).
Ecology: Slope by a road, c. 1150 m.
Distribution: India, Himalayas, S China, Taiwan, most of SE Asia to Bismarck Archipelago.
Distribution in Timor: Timor-Leste – Aileu, Ermera.
Specimens: Timor-Leste – {without loc.}, March 1883, *Forbes* 3522 (L.3548332); **Aileu**, near Saloi, [8°43′41″ S, 125°33′39″ E], 22 January 2004, *Paiva & Silveira* T 122 a (AVE, L.3548330, COI00091842); **Ermera**, [8°45′08″ S, 125°23′49″ E], s.d., *Newton* s.n. (K).

Lindsaeaceae

****Lindsaea cultrata*** (Willd.) Sw., Syn. Fil.: 119 (1806).
Ecology: Terrestrial, sometimes lithophytic, on the edge of a stream, from 750 to 890 m.
Distribution: Tropical and subtropical Asia towards the Pacific islands.
Distribution in Timor: Timor-Leste: Aileu**.**
Specimens: Timor-Leste – Aileu, Asumau, [8°36′52″ S, 125°39′54″ E], 25 September 2016, *Costa et al.* 212 (AVE, L.3959629).

Lindsaea ensifolia Sw., J. Bot. (Schrader) 1800(2): 77 (1801); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885); Kramerin Fl. Males., Ser. 2, 1(3): 211– 212 (1971). — *Schizoloma ensifolium* (Sw.) J.Sm., J. Bot. (Hooker) 3: 414 (1841); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 70 (1944).
Ecology: Terrestrial, in the shade of coffee trees, from 510 to 980 m.

Distribution: Old World tropics from W and S Africa to Australia and Polynesia, north to Hawaii and Taiwan.
Distribution in Timor: Timor-Leste – Díli, Ermera.
Specimens: Timor-Leste – Díli, [Fatunaba, 8°35′47″ S, 125°34′34″ E], {Fatunaba hills}, 1883, *Forbes* 3479 (Posthumus 1944: 70); **Ermera**, roadside between Gleno and Ermera, [8°44′55″ S, 125°26′18″ E], 27 August 2016, *Costa et al.* 157 (AVE, L.3959713).

Lindsaea obtusa J.Sm. ex Hook., Sp. Fil. 1: 224 (1846); Kramer in Fl. Males., Ser. 2, 1(3): 218– 219 (1971).
Lindsaea decomposita auct. non Willd.: Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 70 (1944).
Ecology: Not known for Timor, but recorded as terrestrial, in forests; 300-400 m, in China.
Distribution: Taiwan, throughout Malesia, NE Australia, Bismarck Archipelago, Solomon Islands and Caroline Islands.
Distribution in Timor: Timor-Leste – loc. not specified.
Specimens: Timor-Leste – {without loc.}, March 1882, *Forbes* 3474 (L3559160).

Lindsaea regularis Rosenst., Meded. Rijks-Herb. 14: 31 (1912); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 71 (1944); Holttum in Fl. Males., Ser. 2, 1(3): 246 (1991).
Ecology: Terrestrial, on earthy banks, from 890 to 1500 m.
Distribution: E Java, Lesser Sunda Islands (Bali, Lombok, Flores, Timor).
Distribution in Timor: Timor-Leste – Liquiçá, Manatuto.
Specimens: Timor-Leste – Liquiçá, Bazartete, [Fatumasi, 9°39′04″ S, 124°13′18″ E], {Fatumasse}, s.d., *Newton* s.n. (K); **Manatuto**, [Soibada, 8°52′ S, 125°57′ E], {Sobale hills, Samoro Kingdom}, March 1883, *Forbes* 3865 (BM, L.3561307, LISU).

Obs: we could not find any specimen belonging to *L. agatii* (Brack.) Lehtonen & Tuomisto, although there should be, since it was cited for Timor by Kramer in Fl. Males., Ser. 2, 1(3): 211 (1971).

Lomariopsidaceae

***Lomariopsis* sp.**
Specimens: Timor-Leste – Lautém, Legumau, 26 km WSW of Los Palos, [8°31′15″ S, 126°59′59″ E], 18 October 2005, *Trainor* 40 (DNA0178399, n.v.).

Lycopodiaceae

***Lycopodium* sp. A**
Specimens: Timor-Leste – Ainaro, track to the top of Ramelau, [8°52′37″ S, 125°35′04″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 458 (AVE, COI00092261, L.3497776); [Suro, 9°01′30″ S, 125°31′30″ E], {Suro, Huati Builico, faldas do Tata-Mailau}, s.d., *Cinatti* II 31 (LISC061398);

***Lycopodium* sp. B**
Specimens: Timor-Leste – Viqueque, Mount Mundo Perdido, [8°42′45″ S, 126°20′25″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 542 (AVE, L.3497775);

****Palhinhaea cernua*** (L.) Vasc. & Franco, Bol. Soc. Brot., sér. 2, 41: 25 (1967). **(Figure II.10)**
Ecology: Terrestrial, sometimes scrambling, on roadsides and clayey soils, from 1090 to 1640 m.
Distribution: Pantropical.
Distribution in Timor: Timor-Leste – Aileu, Ainaro, Díli.
Specimens: Timor-Leste – Aileu, road Aileu-Díli, [8°38′03″ S, 125°36′58″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 479 (AVE, COI00092260, L.3477396); Se loi kraik, [8°41′52″ S, 125°32′14″ E], 2 July 2016, *Costa et al.* 72 (AVE, L.3959717); c. 3.2 km E by S of Remexio, [8°37′14″ S, 125°41′44″ E], 4 November 2006, *Cowie* 11404 (DNA0185511, n.v.; L.3726694); [Aileu, 8°43′41″ S, 125°33′59″ E], {Bessilau}, 9 January 1954, *van Steenis* 18631 (L.3477414, LISC061397); **Ainaro**, roadside between Maubisse and Turiscai, [8°49′33″ S, 125°38′10″ E], 8 April 2017, *Costa et al.* 254 (AVE, L); **Díli**, [Fatunaba, 8°35′47″ S, 125°34′34″ E], {Fatunaba hills}, 21 January 1883, *Forbes* 3422 (BO).

****Phlegmariurus phlegmaria*** (L.) Holub, Preslia 36(1): 21 (1964).
Ecology: Epiphytic, in rain forest, from 360 to 900 m.
Distribution: Paleotropical.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Díli, Lautém.
Specimens: West Timor – South Central Timor, [Kapan, 9°44′05″ S, 124°16′26″ E], {forest of Nasimetan, 6 km S. of Kapan}, 14 March 1939, *Bloembergen* 3470 (BO, L.3474449); [Soe, 9°52′ S, 124°17′ E], {Soe}, s.d., *Walsh* 83 (BO); **Timor-Leste – Díli**,

Manucoco, [8°15'52" S, 125°34'35" E], 8 August 2016, *Costa et al.* 122 (AVE, L.3959716); Atauro Island, eastern slopes of Mount Manucoco Lulo, [8°16'10" S, 125°34'27" E], 13 May 2015, *Cowie & Santana* 13778 (DNA0269643, n.v.; L.3978108); **Lautém**, Legumau, 26 kn WSW of Los Palos., [8°24'03" S, 127°10'54" E], 18 October 2005, *Trainor* 8 (DNA0178411, n.v.; L.3471912).

Phlegmariurus pinifolius (Trevis.) Kiew, PhytoKeys 96: 108 (2018).
Lycopodium pinifolium Blume, Enum. Pl. Javae 2: 264 (1828), nom. illeg. hom.; Rensch, Hedwigia 74: 253 (1934).
Ecology: Epiphytic, c. 1000 m.
Distribution: Malesia, extending to Melanesia, to Solomon Islands.
Distribution in Timor: Timor-Leste – Ainaro.
Specimens: Timor-Leste – Ainaro, Ramelau, [8°53'37" S, 125°31'07" E], 30 April 1932, Stein 1167 (Rensch 1934: 253).

Phlegmariurus carinatus (Desv.) Ching, Acta Bot. Yunnan. 4: 120 (1982).
Ecology: Plant cultivated on a tree near a house.
Distribution: S China, Taiwan, Indochina, throughout Malesia to the Pacific and NE-E Australia.
Distribution in Timor: Timor-Leste – Viqueque
Specimens: Timor-Leste – Viqueque, near to Mount Laritame, [8°41'42" S, 126°22'42" E], 16 February 2005, *Paiva, Silveira & Sousa* T 574 (AVE, COI00092259, L.3483033).
Obs: since this is a cultivated plant we do not mark this one as a new record for Timor-Leste.

***Phlegmariurus proliferu*s** (Blume) A.R.Field & Bostock, PhytoKeys 20: 46 (2013). — *Lycopodium proliferum* Blume, Enum. Pl. Javae 2: 265 (1828); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 44 (2002).
Ecology: Montane habitats, c. 1800 m.
Distribution: Peninsular Malaysia, Borneo, Java; Lesser Sunda Islands (Timor), Moluccas, Sulawesi, Bismarck Archipelago, Solomon Islands, Queensland and New Caledonia.
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 84a, 84b, 89a, 89b (BO, v.n.).

****Phlegmariurus squarrosus*** (G.Forst.) Á.Löve & D.Löve, Taxon 26: 324 (1977).
Ecology: Epiphytic, in forests, from 1180 to 1450 m.
Distribution: Madagascar to Tropical Asia, E Australia and Pacific Islands.
Distribution in Timor: Timor-Leste – Viqueque.
Specimens: Timor-Leste – Viqueque, Dauboruba'a, [8°41'29" S, 126°23'16" E], 29 October 2016, *Costa et al.* 222 (AVE, L.3959704); Mundo Perdido, c. 33 km SSW of Baucau, [8°43'16" S, 126°19'56" E], 28 September 2006, *Pinto & Trainor* 86 (DNA0193437, n.v.; L.3472757).

Lygodiaceae

Lygodium circinnatum (Burm.f.) Sw., Syn. Fil.: 153 (1806); Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 349 (1834); Rensch, Hedwigia 74: 251 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 109 (1944); Holttum in Fl. Males., Ser. 2, 1(1): 59 (1959).
Ecology: Terrestrial, climber, in forests with humus rich soil, from 40 to 740 m.
Distribution: Sri Lanka, NE India, S China, Indochina, Malesia to Melanesia.
Distribution in Timor – Timor-Leste – Baucau, Covalima, Lautém, Manatuto.
Specimens: Timor-Leste – Baucau, roadside of Watabo'o, [8°26'40" S, 126°28'09" E], 7 May 2017, *Costa et al.* 287 (AVE, L); **Covalima**, Suai area, south coast, [9°18'48" S, 125°18'43" E], 11 December 2011, *Graham* 029 (DNA0213051, n.v.); **Lautém**, Ira Malaru area, near Los Palos, [8°31'08" S, 126°59'15" E], 7 October 2005, *Cowie* 10862 (DNA0177256, n.v.; L.3575723); **Manatuto**, Mane Hat to Hali Manuer, [8°52'09" S, 126°00'05" E], 25 June 2016, *Costa et al.* 37 (AVE, L.3959724); **Timor** (loc. not specified) – {without loc.}, s.d., *Anonymous* s.n. (L, P01259531, P01259532).

Lygodium flexuosum (L.) Sw., J. Bot. (Schrader) 1800(2): 106 (1801); Kuhn, Forschungsr. Gazelle 4(Farne): 14 (1889); Rensch, Hedwigia 74: 251 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 110 (1944); Holttum in Fl. Males., Ser. 2, 1(1): 53 (1959).
Ecology: Terrestrial, climber in secondary forests, from 0 to 1290 m.
Distribution: Sri Lanka, Himalayas, SW and S China, Hong Kong, Ryukyu Islands, Taiwan, S and SE to N Queensland throughout Malesia and Melanesia.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Aileu, Bobonaro, Díli, Ermera, Lautém, Liquiçá, Manatuto.
Specimens: West Timor – Kupang, [Taimanani Mountains, 9°57'47" S, 123°47'24" E],

{Taimanani Mts}, 24 May 1875, *Naumann* s.n. (B 20 0188775); [Kupang, 10°10′15″ S, 123°36′25″ E], {Koepang}, 15 May 1875, *Naumann* s.n. (Posthumus 1944: 110); **Timor-Leste – Aileu**, Talitu, [8°36′41″ S, 125°36′51″ E], 2 July 2016, *Costa et al*. 70 (AVE, L.3959729); Asumau, [8°36′59″ S, 125°39′42″ E], 25 September 2016, *Costa et al*. 207 (AVE, L.3959727); **Bobonaro**, Corluli, [8°55′42″ S, 125°10′39″ E], 16 September 2016, *Costa et al*. 179 (AVE, L.3959726); **Díli**, [Díli, 8°33′14″ S, 125°34′42″ E], {above Timur Dilly}, 28April 1938, *Jaag* 95 (L.3576332); Dare, [8°35′40″ S, 125°34′03″ E], 22 July 2016, *Costa et al*. 78 (AVE, L.3959730); Manucoco, [8°16′13″ S, 125°35′12″ E], 8 August 2016, *Costa et al*. 104 (AVE, L.3959712); **Ermera**, near ancient forest of Mahubo, after old Ermera, [8°44′03″ S, 125°20′20″ E], 19 February 2005, *Paiva, Silveira & Sousa* T 611 (AVE, COI00080480, L); roadside between Gleno and Ermera, [8°44′55″ S, 125°26′18″], 27 August 2016, *Costa et al*. 161 (AVE, L.3959725); **Lautém**, Mount Paitxau Range, near Malahara, [8°28′29″ S, 127°10′05″ E], 2 March 2006, *Cowie* 11081 (DNA0177878, n.v.; L.3576123); **Liquiçá**, inland from Dili on road to Railako, [8°36′56″ S, 125°28′56″ E], 6 May 2006, *Cowie* 11110 (DNA0177907, n.v.; L.3576122); roadside between Tibar and Faiten, [8°36′59″ S, 125°29′09″ E], 23 June 2016, *Costa et al*. 10 (AVE, L.3959731); **Manatuto**, Mane Hat to Hali Manuer, [8°52′09″ S, 126°00′05″ E], 25 June 2016, *Costa et al*. 43 (AVE, L.3959728).

Lygodium japonicum (Thunb.) Sw., J. Bot. (Schrader) 1800(2): 106 (1801); Rensch, Hedwigia 74: 251 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 110 (1944); Holttum in Fl. Males., Ser. 2, 1(1): 51 (1991). **(Figure II.11)**
Ecology: Terrestrial, climber on trees of secondary forest, from 0 to 980 m.
Distribution: Sri Lanka, India, Bhutan, China to Japan, Indochina, throughout Malesia to New Guinea and tropical Australia. Invasive in North America and South Africa.
Distribution in Timor: Timor-Leste – Aileu, Díli, Liquiça, Viqueque.
Specimens: Timor-Leste – Aileu, Asumau, [8°37′05″ S, 125°38′25″ E], 25 September 2016, *Costa et al*. 198 (AVE, L.3959723); **Díli**, Dare-Fatunaba, [8°35′39″ S, 125°34′00″ E], 5 January 2019, *Costa* 338 (AVE, L); [Díli, 8°33′14″ S, 125°34′42″ E], {Díli, Nova Díli}, 25 August 1962, *Cinatti* IV 349 (L, LISC061423); {Am Berghang Oberhalb Timor-Dilly}, 29 April 1938, *Jaag* 117 (BO, L.3576017); [Fatunaba, 8°35′47″ S, 125°34′34″ E], {Fatunaba hills}, 1 March 1882, *Forbes* 3458 (BM, BO, L.3576019, LISU); Vera Cruz, [Dare, 8°35′47″ S, 125°34′35″ E], {Dare}, 1911, *De Castro* 45 (BO); **Liquiçá**, inland from Dili on road to Railako, [8°38′18″ S, 125°27′17″ E], 5 March 2006, *Cowie* 11113 (DNA0177910, n.v.; L.3575986); **Viqueque**, road Viqueque to Baucau, before Mount Laritame, [8°46′51″

S, 126°22′36″ E], 17 February 2005, *Paiva, Silveira & Sousa* T 587 (AVE, COI00080460, L.3575987).

Marattiaceae

****Angiopteris evecta*** (G.Forst.) Hoffm., Commentat. Soc. Regiae Sci. Gott. 12: 29: t.5 (1793–1794). **(Figure II.12)**
Ecology: Terrestrial, at the edge of a river, c. 900 m.
Distribution: From India and China through SE Asia to Australia and the Pacific islands. Naturalized in Costa Rica, Jamaica, Hawaii and possibly elsewhere.
Distribution in Timor: Timor-Leste – Aileu, Viqueque.
Specimens: Timor-Leste – Aileu, edge of Fursailefon river, [8°36′59″ S, 125°39′42″ E], 8 April 2017, *Costa et al.* 262 (AVE, L); **Viqueque**, [8°43′16″ S, 126°19′56″ E], {Mundo Perdido, c. 33 km SSW of Baucau}, 28 September 2006, *Pinto & Trainor* 81 (DNA0193435, n.v.; L.3505632).

Marsileaceae

****Marsilea minuta*** L., Mant. Pl. Altera: 308 (1771).
Marsilea crenata C.Presl, Reliq. Haenk. 1: 84, t.12, f.13 (1825); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 111 (1944).
Marsilea crenata var. *timorensis* Alderw., Bull. Jard. Bot. Buitenzorg, Sér. 2, 1: 14 (1911); van Alderwerelt van Rosenburgh, Malayan Fern Allies: 7 (1915).
Ecology: Rooted aquatic, in rice fields, from c. 10 to 350 m.
Distribution: Paleotropical, plus occasional introductions elsewhere, like in the Americas and Caribbean.
Distribution in Timor: West Timor – Kupang, South Central Timor, North Central Timor; Timor-Leste – Bobonaro, Lautém.
Specimens: West Timor – Kupang, [Nonbaun, 9°54′22″ S, 123°54′10″ E], {Timor Nonbaun}, 1911, *Teysmann* 16428 (BO, type of *Marsilea crenata* var. *timorensis* Alderw.); **North Central Timor**, Desa Tualene, 40.5 km from Kefamenanu, [9°26′48″ S, 124°28′41″ E], 1 April 1998, *Mitchell* 5272A (DNA0164184, n.v.); **South Central Timor**, [Soe, 9°52′ S, 124°17′ E], {Soe}, 13 July 1941, *Pil* 813 (BO); **Timor-Leste – Bobonaro**, road Maubara-Aidabaleten, after crossing Lóis stream, [8°45′59″ S, 125°05′59″ E], 7 February 2005, *Paiva, Silveira & Sousa* T 345 (AVE, COI00080453, L.3727922); idem,

at Lóis, after crossing Lóis stream, [8°43'20" S, 125°06'37" E], 7 February 2005, *Paiva, Silveira & Sousa* T 330 (AVE, COI00080454, L.3566670); **Lautém**, Com, [8°21'23" S, 127°02'57" E], 15 May 2013, *Westaway* 4262 (DNA0237092, n.v.).

***Marsilea* sp.**
Specimens: Timor-Leste – Lautém, Lake Iralalaro-Irasequiro area, [8°25'44" S, 127°07'23" E], 2 October 2009, *Cook & Lee* 85 (DNA0227332, n.v.).

Nephrolepidaceae

Nephrolepis biserrata (Sw.) Schott, Gen. Fil.: t.3 (1834); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 63 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 46 (2002); Hovenkamp & Miyamoto in Fl. Males., Ser. 2, 4: 108 (2012).
Aspidium splendens Willd., Sp. Pl., ed. 4, 5: 220 (1810); Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 345 (1834).
Nephrodium timoriense Desv., Mém. Soc. Linn. Paris 6(3): 253 (1827).
Ecology: Terrestrial, frequently on limestone, sometimes epiphytic, on roadsides, savannas, in open or slightly shaded places and in primary montane evergreen closed forests, from 40 to 1800 m.
Distribution: Pantropical.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Bobonaro, Covalima, Díli, Lautém, Manatuto.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 24, 37a, 37b, 59a, 59b, 116a, 116b (BO n.v **); Timor-Leste – Bobonaro**, roadside from Balibo to Maliana, [8°57'23" S, 125°04'39" E], 16 September 2016, *Costa et al.* 175 (AVE, L.3959782); **Covalima**, spring water of Wecasa, [9°22'45" S, 125°09'16" E], 18 April 2017, *Costa et al.* 268 (AVE, L); **Díli**, Atauro Island, crest of ridge near Mount Manucoco, [8°16'10" S, 125°34'27" E], 14 May 2015, *Cowie & Santana* 13804 (DNA0269660, n.v.; L.3978082); **Lautém**, Mount Paitxau range, [8°28'33" S, 127°10'31" E], 1 March 2006, *Cowie* 11038 (DNA0177836, n.v.; L.3582191); **Manatuto**, Leo Haat, [8°53'04" S, 125°59'14" E], 25 June 2016, *Costa et al.* 49 (AVE, L.3959753); **Timor** (loc. not specified) – {without loc.}, s.d., *Leschenault* s.n. (P00631000, type of *Nephrodium timoriense* Desv.).

Nephrolepis brownii (Desv.) Hovenkamp & Miyam., Blumea 50(2): 293 (2005); Hovenkamp & Miyamoto in Fl. Males., Ser. 2, 4: 110 (2012).

Nephrolepis acuta auct. non (Schkuhr) C.Presl: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885).
Nephrolepis hirsutula auct. non (G.Forst.) C.Presl: Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 64 (1944) *p.p. quoad spec.* Bloembergen 3536 et Forbes 3689.
Ecology: Terrestrial, sometimes epiphytic, on roadsides, in forests and coffee plantations, from 230 to 1580 m.
Distribution: Tropical Asia. Introduced in tropical America.
Distribution in Timor: West Timor: South Central Timor; Timor-Leste – Aileu, Ainaro, Díli, Ermera, Liquiça, Manufahi.
Specimens: West Timor – South Central Timor, [Kapan, 9°44'05" S, 124°16'26" E], {Noil Bisnain near Kapan}, 18 March 1939, *Bloembergen* 3536 (L.3581490); **Timor-Leste – Aileu**, Asumau, [8°37'05" S, 125°38'25" E], 25 September 2016, *Costa et al.* 196 (AVE, L.3959779); **Ainaro**, roadside between Maubisse and Turiscai, [8°48'57" S, 125°38'39" E], 8 April 2017, *Costa et al.* 256 (AVE, L); **Díli**, Dare, [8°35'39" S, 125°34'00" E], 22 July 2016, *Costa et al.* 83 (AVE, L.3959797); Manucoco, [8°15'52" S, 125°34'35" E], 8 August 2016, *Costa et al.* 125 (AVE, L.3959778); **Ermera**, roadside between Gleno and Ermera, [8°44'47" S, 125°26'16" E], 27 August 2016, *Costa et al.* 164 (AVE, L.3959780); **Liquiçá**, roadside between Tibar and Faiten, [8°36'59" S, 125°29'09" E], 23 June 2016, *Costa et al.* 14 (AVE, L.3959781); **Manufahi**, [Bubususu, 8°54'52" S, 125°47'00" E], {Bibiçuçu}, March 1882, *Forbes* 3689 (BO, L).

Nephrolepis cordifolia (L.) C.Presl, Tent. Pterid.: 79 (1836); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 63 (1944); Hovenkamp & Miyamoto in Fl. Males., Ser. 2, 4: 111 (2012).
Ecology: Terrestrial, on roadsides, in montane forests, often dominated by *Dacrycarpus imbricatus*, from 600 to 1580 m. Sometimes cultivated as an ornamental.
Distribution: Pantropical.
Distribution in Timor: Timor-Leste – Aileu, Ainaro, Ermera, Manatuto, Viqueque.
Specimens: Timor-Leste – Aileu, Asumau, [8°36'59" S, 125°39'42" E], 25 September 2016, *Costa et al.* 209 (AVE, L.3959795); **Ainaro**, roadside between Maubisse and Turiscai, [8°48'57" S, 125°38'39" E], 8 April 2017, *Costa et al.* 255 (AVE, L); **Ermera**, going towards old Ermera, after descending Mount Mahubo, at Dauhati, [8°45'00" S, 125°21'16" E], 19 February 2005, *Paiva, Silveira & Sousa* T 616 (AVE, COI00092273, L.3980417); **Manatuto**, Soibada, Malushum, [8°51'38" S, 125°58'52" E], 25 June 2016, *Costa et al.* 33 (AVE, L.3959796); **Viqueque**, Mundo Perdido, c. 33 km SSW of Baucau,

[8°43'16" S, 126°19'56" E], 27 September 2006, *Pinto & Santana* 17 (DNA0193375, n.v.; L.3727897).

Nephrolepis hirsutula (G.Forst.) C.Presl, Tent. Pterid.: 79 (1836); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 64 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara:47 (2002); Hovenkamp & Miyamoto in Fl. Males., Ser. 2, 4: 117 (2012).
Ecology: In West Timor it is recorded from open places, in montane habitats, from 1500–1800 m. No data is available for Timor-Leste.
Distribution: Tropical Asia to the Pacific.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Díli.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 80, 86, 90 (BO n.v **); Timor-Leste – Díli**, Atauro Island, northern slopes of Mount Manucoco, [8°16'10" S, 125°34'27" E], 19 May 2015, *Cowie & Santana* 13839 (DNA0270309, n.v.); [Díli, 8°33'48" S, 125°35'15" E], {am berghang oberhalb Timor-Dilly}, 28 April 1938, *Jaag* 122 (BO); **Timor** (loc. not specified) – {without loc.}, March 1882, *Spanoghe* s.n. (L); s.d., *Anonymous in Desvaux* s.n. (P00630976).

***Nephrolepis* sp.**
Specimens: Timor-Leste – Lautém, near Namalutu River, south coast, c. 6 km west of Lore, [8°31'15" S, 126°59'59" E], 26 February 2006, *Cowie* 10999 (DNA0177744, n.v.); [Lospalos, 8°31'07" S, 127°00'09" E], {Planalto de Lospalos}, 11 July 1960, *Verdial* 23 V (LISC061415); **Manufahi**, Betano area South coast, [9°09'31" S, 125°45'12" E], 15 December 2011, *Graham* 080 (DNA0213130, n.v.).

Oleandraceae

Oleandra musifolia (Blume) C.Presl, Epimel. Bot.: 42 (1849); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 62 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 48 (2002); Hovenkamp & Ho in Fl. Males., Ser. 2, 4: 128 (2012).
Oleandra neriiformis Cav., Anales Hist. Nat. 1: 115 (1799); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885).
Ecology: Epiphytic or lithophytic, sometimes terrestrial, in forests, from 440 to 1580 m.
Distribution: S India, Sri Lanka, S China, Indochina, Philippines, Sulawesi, Java, Lesser Sunda Islands, Australia (Queensland).
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Aileu, Ainaro, Díli, Ermera, Manufahi, Viqueque.

Specimens: West Timor – {without loc.}, s.d., *Ruma* 64, 73, 115 (BO, n.v.); **Timor-Leste – Aileu**, Fatukhun, [8°43′41″ S, 125°33′59″ E], 17 January 2004, *Paiva & Silveira* T 41 (AVE, COI00092276, L.3595322); Aileu, Dili to Aileu, near Saloi, [8°43′41″ S, 125°33′39″ E], 22 January 2004, *Paiva & Silveira* T 121 (AVE, COI00092275, L.3595321); Se loi kraik, [8°41′27″ S, 125°32′30″ E], 2 July 2016, *Costa et al.* 74 (AVE, L.3959793); roadside between Besilau and Aileu, [8°38′32″ S, 125°35′41″ E], 8 April 2017, *Costa et al.* 261 (AVE, L); **Ainaro**, roadside between Maubisse and Turiscai, [8°48′57″ S, 125°38′39″ E], 8 April 2017, *Costa et al.* 258 (AVE, L); **Díli**, Dare, [8°35′39″ S, 125°34′09″ E], 5 January 2019, *Costa* 341 (AVE); [Fatunaba, 8°35′47″ S, 125°34′34″ E], {Fatunaba hills}, 12 March 1883, *Forbes* 3482 (BM, L.3579730); **Ermera**, near ancient forest of Mahubo, after old Ermera, [8°44′03″ S, 125°20′20″ E], 19 February 2005, *Paiva, Silveira & Sousa* T 599 (AVE, COI00092274, L.3595320); **Manufahi**, Colmetata forest, [8°52′30″ S, 125°42′08″ E], 20 May 2017, *Costa et al.* 319 (AVE, L); [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, 1883, *Forbes* 3693 (BM, LISU); **Viqueque**, [Mount Mundo Perdido, 8°43′10″ S, 126°19′34″ E], {Mt Perdido (ascent of Ossu)}, 23 December 1953, *van Steenis* 18293 (BM, L.3592051).

Ophioglossaceae

Botrychium lanuginosum Wall. ex Hook. & Grev., Icon. Filic. t.79 (1828); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 29 (2002).
Ecology: Montane habitats, in shaded places, from 1500 to 1800 m.
Distribution: N India to China and Taiwan, south to Sri Lanka, Vietnam, Philippines, Sumatra Java and Lesser Sunda Islands (Bali, Lombok, Timor, Alor), Sulawesi and New Guinea.
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 75, 91 (BO, n.v.).

Botrychium ternatum (Thunb.) Sw., J. Bot. (Schrader) 1800(2): 111 (1801); Rensch, Hedwigia 74: 252 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 113 (1944).
Ecology: Recorded only from the highest mountain in Timor, with no further details on altitude or plant community, but recorded from shaded shrubs; 400–1000 m, in China.
Distribution: Temperate and warm regions of E Asia, including the India, Himalayas, China, Korea, Japan, Vietnam, Borneo and Timor-Leste.

Distribution in Timor: Timor-Leste – Ainaro.
Specimens: Timor-Leste – Ainaro, [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Ramelau}, 2 May 1932, *Stein* 1127 (Rensch 1934: 252; Posthumus 1944: 113).

****Helminthostachys zeylanica*** (L.) Hook., Gen. Fil.: t.47B (1840).
Ecology: Not mentioned for Timor, but recorded from forests, edges of marshes, at low elevations in China, and also from lowlands to montane forests, in secondary forests, plantations, and sparse forests, in Brunei Darussalam (Cicuzza et al. 2025).
Distribution: Tropical Asia and N Australia.
Distribution in Timor: West Timor – Belu; Timor-Leste – Lautém.
Specimens: West Timor – Belu, [Atambua, 9°06′22″ S, 124°53′33″ E], {Atambua, Nord Belu}, 3 January 1970, *Kooy* 780 (L.3546331); **Timor-Leste – Lautém**, Ira Caupiti area c. 10 km SSW of Tutuala, [8°23′46″ S, 127°13′59″ E], 22 October 2006, *Santana* s.n (DNA0193406, n.v.); Ira Siwuero River, Mehara area, near Los Palos., [8°27′39″ S, 127°09′52″ E], 4 October 2005, *Cowie & Xavier* 10783 (DNA0177139, n.v.; L.3546456).

Ophioglossum pendulum L., Sp. Pl., ed. 2, 2: 1518 (1763); Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 349 (1834); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 112 (1944). **(Figure II.13)**
Ecology: Epiphytic, sometimes growing on *Platycerium*, it roots superficially under the cover of fronds of *Platycerium*, in forests, from 600 to 1450 m.
Distribution: Paleotropical plus E Australia.
Distribution in Timor: Timor-Leste – Díli, Viqueque.
Specimens: Timor-Leste – Díli, Manucoco, [8°15′52″ S, 125°34′30″ E], 8 August 2016, *Costa et al.* 132 (AVE, L.3959791); **Viqueque**, Mundo Perdido, c. 33 km SSW of Baucau, [8°43′16″ S, 126°19′56″ E], 29 September 2006, *Pinto & Trainor* 109 (DNA0193445, n.v.); [Uato-Carabau, 8°45′24″ S, 126°41′02″ E], {Uato-Carabao}, 22 December 1953, *van Steenis* 18223 (L.3579412, LISC061416); **Timor** (loc. not specified) – {without loc.}, s.d., *Gaudichaud* s.n. (Posthumus 1944: 112); s.d., *Gaudichaud* s.n. (P not found).

Ophioglossum reticulatum L., Sp. Pl. : 1063 (1753); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 112 (1944).
Ophioglossum timorense Miq., Ann. Mus. Bot. Lugduno-Batavi 4: 93 (1868).
Ophioglossum obovatum Miq., Ann. Mus. Bot. Lugduno-Batavi 4: 93 (1868).

Ecology: Not mentioned for Timor, but recorded from shaded forests, at 1100–4000 m, in China.
Distribution: Pantropical.
Distribution in Timor: Not specified.
Specimens: Timor (loc. not specified) – {without loc.}, s.d., *Spanoghe* s.n (L0544689); s.d., *Spanoghe* s.n (L0544690); s.d., *Spanoghe* s.n. (P01652810); s.d., *Spanoghe* s.n. (P01652909).

Polypodiaceae

Dasygrammitis fuscata (Blume) Parris, Gard. Bull. Singapore 58(2): 239 (2007). *Ctenopteris fuscata* (Blume) Kunze, Bot. Zeitung (Berlin) 4: 425 (1846); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 33 (2002).
Ecology: Montane forest, from 1700 to 1800 m.
Distribution: Peninsular Malaysia, Sumatra, Timor, Sulawesi, Philippines and Borneo.
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 106, 114 (BO, n.v.).

Drynaria pleuridioides C.Presl, Ann. Mus. Bot. Lugduno-Batavi 2: 229 (1866); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 40 (1998); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 40 (2002).
Ecology: Recorded as epiphytic, in trees of savanna, at 300 m.
Distribution: Sumatra, Java, Lesser Sunda Islands, Sulawesi and Moluccas.
Distribution in Timor: West Timor – loc. not specified; Timor (loc. not specified).
Specimens: West Timor – {without loc.}, s.d., *Ruma* 45, 58a, 58b, 61 (BO, n.v.); **Timor** (loc. not specified) – {without loc.}, s.d., *Leschenault* s.n. (P01629748).

Drynaria quercifolia (L.) J.Sm., J. Bot. 3: 398 (1841), *nom. cons.*; Rensch, Hedwigia 74: 249 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 103 (1944); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 40 (1998). **(Figure II.14)** — *Polypodium quercifolium* L., Sp. Pl.: 1087 (1753); Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 345 (1834); Kuhn, Forschungsr. Gazelle 4(Farne): 11 (1889).
Ecology: Epiphytic or lithophytic, sometimes terrestrial, on roadsides, and in coffee plantations, and other forests, from 0 to 850 m.
Distribution: Tropical Asia and N Australia.

Distribution in Timor: West Timor – Kupang, South Central Timor; Timor-Leste – Bobonaro, Covalima, Díli, Lautém, Manatuto, Viqueque.
Specimens: West Timor – Kupang, [Obenaik, 9°52′06″ S, 124°00′09″ E], {kp. Obe Naik.}, 2 March 1939, *Bloembergen* 3350 (L.3532650); [Pariti, 10°00′53″ S, 123°44′41″ E], {Pariti}, 23 May 1875, *Naumann* s.n. (B 20 0060829); [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Kupang, Nordseite der Kupangbay, ... Taimanani}, 23 May 1875, *Naumann* s.n. (B 20 0060827); [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Taimanani Mts}, 24 May 1875, *Naumann* s.n. (B 20 0060828); [Kupang, 10°10′15″ S, 123°36′25″ E], {Koepang}, 18 May 1875, *Naumann* s.n. (Posthumus 1944: 103); **South Central Timor**, [Soe, 9°52′ S, 124°17′ E], {Soe}, 1 April 1924, *Smith* 2669 (K); **Timor-Leste – Bobonaro**, Aidabaleten, road of Carimbala, [8°47′52″ S, 125°05′47″ E], 5 January 2019, *Costa* 327 (AVE, L); **Covalima**, roadside of Niguir, [9°20′45″ S, 125°04′32″ E], 19 April 2017, *Costa et al.* 269 (AVE, L); Suai area, south coast, [9°18′48″ S, 125°18′43″ E], 11 December 2011, *Graham* 026 (DNA0213039, n.v.); **Díli**, Dare, [8°35′39″ S, 125°34′04″ E], 22 July 2016, *Costa et al.* 87 (AVE); Manucoco, [8°16′18″ S, 125°35′09″ E], 7 August 2016, *Costa et al.* 89 (AVE, L.3959737); Dare, [8°35′39″ S, 125°34′04″ E], 31 December 2018, *Costa* 326 (AVE); [Díli, 8°33′25″ S, 125°33′37″ E], {am berghang oberhalb Timor-Dilly}, 28 April 1938, *Jaag* 65 (BO); 28 April 1938, *Jaag* 125 (BO); **Lautém**, from Com to Bauru (Kitchanoko), [8°21′42″ S, 126°54′05″ E], 19 January 2004, *Paiva & Silveira* T 106 (AVE, COI00092267); Tutuala to the beach (Valo), [8°23′32″ S, 127°15′26″ E], 20 January 2004, *Paiva & Silveira* T 119 (AVE, COI00080466); **Manatuto**, road Metinaro-Manatuto, at Beheda, [8°29′38″ S, 125°57′17″ E], 26 February 2005, *Paiva, Silveira & Pratas* T 654 (AVE, COI00080478); Soibada, Malushum, [8°51′38″ S, 125°58′52″ E], 25 June 2016, *Costa et al.* 24 (AVE, L.3959738); **Viqueque**, road Viqueque to Baucau, [8°46′57″ S, 126°22′39″ E], 17 February 2005, *Paiva, Silveira & Sousa* T 577 (AVE, COI00091851); Ossú de Cima, roadside of Waibua, [8°43′59″ S, 126°22′10″ E], 12 November 2018, *Costa* 325 (AVE); **Timor** (loc. not specified) – {without loc.}, s.d., Zippelius s.n. (L.3532629); s.d., Anonymous 263 (L).

Drynaria sparsisora (Desv.) T.Moore, Index Fil., fasc. 17-18: 348 (1862); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 43 (1998); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 39 (2002).
Ecology: Savanna and mixed tropical monsoon forest, 200–600 m.
Distribution: SE Asia to Australia. Throughout Malesia but in the Lesser Sunda Islands, known only from East Timor.

Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Lautém.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 40, 42a, 42b (BO, n.v.); **Timor-Leste – Lautém**, foot of Mount Paitxau Range, near Malahara, [8°28'30" S, 127°11'34" E], 2 March 2006, *Cowie & Pinto* 11087 (DNA0177884, n.v.; L.3550281).

***Drynaria* sp.**
Specimens: West Timor – North Central Timor, [Taekas, 9°23'51" S, 124°29'36" E], {Kefamenano, Taekas}, 25 November 1986, *Wiriadinata* 4046 (BO, L.3550272); **Timor-Leste – Liquiçá**, roadside between Tibar and Faiten, [8°36'59" S, 125°29'09" E], lithophytic fern, in schist, on a dry and gravelly slope near a road, in the shade of trees, 23 June 2016, *Costa et al.* 11 (AVE).

****Goniophlebium pseudoconnatum*** (Copel.) Copel., Fern Fl. Philipp. 3: 462 (1960).
Ecology: Terrestrial, on roadside, c. 1670 m.
Distribution: Borneo, Philippines, Sulawesi, Moluccas, New Guinea and Timor-Leste.
Distribution in Timor: Timor-Leste – Ainaro.
Specimens: Timor-Leste – Ainaro, roadside between Maubisse and Turiscai, [8°49'22" S, 125°37'01" E], 7 April 2017, *Costa et al.* 242 (AVE, L).

Goniophlebium subauriculatum (Blume) C.Presl, Tent. Pterid.: 186 (1836); Hovenkamp & Rödl.-Linder. in Fl. Males., Ser. 2, 3: 58 (1998). — *Polypodium subauriculatum* Blume, Enum. Pl. Javae 2: 133 (1828); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 97 (1944).
Ecology: Epiphytic or lithophytic, sometimes terrestrial, on roadsides in forests, from 430 to 1720 m.
Distribution: S China, SE Asia to Papua New Guinea, Melanesia and NE Australia.
Distribution in Timor: West Timor – Kupang, North Central Timor; Timor-Leste – Aileu, Ainaro, Baucau, Díli, Manufahi, Viqueque.
Specimens: West Timor – Kupang, [Bioba, 9°35'00" S, 123°55'00" E], {village of Bioba, W. slope of Mount Timau}, 4 March 1958, *Bloembergen* 3388 (K, L.3553561); **North Central Timor**, [Taekas, 9°23'51" S, 124°29'36" E], {Kefamenano, Taekas}, 25 November 1986, *Wiriadinata* 4045 (L.3553548); **Timor-Leste – Aileu**, Fatukhun, [8°38'06" S, 125°36'45" E], 17 January 2004, *Paiva & Silveira* T 50 (AVE, L.3553545); Dili to Aileu, near Saloi, [8°43'41" S, 125°33'39" E], 22 January 2004, *Paiva & Silveira* T 123 (AVE); roadside between Aileu and Maubisse, [8°48'16" S, 125°35'31" E], 7 April 2017,

Costa et al. 239 (AVE, L); **Ainaro**, Hato Builico-Maubisse, near Maubisse, [8°49′38″ S, 125°36′06″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 468 (AVE, COI00080483, L.3553544); **Baucau**, Waidede forest, [8°36′41″ S, 126°22′38″ E], 6 May 2017, *Costa et al.* 278 (AVE, L); **Díli**, Dare, [8°35′39″ S, 125°34′04″ E], 22 July 2016, *Costa et al.* 85 (AVE, L.3959715); Manucoco, [8°15′57″ S, 125°34′42″ E], 8 August 2016, *Costa et al.* 118 (AVE, L.3959714); **Manufahi**, [Turiscai, 8°49′22″ S, 125°42′27″ E], {Turskain}, 1883, *Forbes* 3565 (BM); 1883, *Forbes* 3568 (BM); **Viqueque**, Mount Mundo Perdido, [8°43′16″ S, 126°19′56″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 511 (AVE, COI00092269, L.3553546); 16 February 2005, *Paiva, Silveira & Sousa* T 515 (AVE, COI00091853, L.3553547); Mount Mundo Perdido, [8°43′16″ S, 126°19′56″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 516 (AVE, COI00092265); Waibua forest at foothills of Mundo Perdido mountain, [8°43′59″ S, 126°22′10″ E], 12 May 2017, *Costa et al.* 303 (AVE).

Lecanopteris sinuosa (Wall. ex Hook.) Copel., Univ. Calif. Publ. Bot. 16: 123 (1929); Hennipman & Hovenkamp in Fl. Males., Ser. 2, 3: 64 (1998). — *Polypodium sinuosum* Wall. ex Hook., Sp. Fil. 5: 61, t. 284 (1863); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 100 (1944).
Ecology: Not mentioned for Timor, but recorded as epiphytic in various types of lowland evergreen and seasonal forest, at 0–500 m, elsewhere in Malesia.
Distribution: From Indochina, throughout Malesia to Melanesia.
Distribution in Timor: not specified.
Specimens: **Timor** (loc. not specified) – {without loc.}, s.d., *Teysmann* s.n. (BO, fide Posthumus, not found).

Lepisorus mucronatus (Fée) Li Wang, Bot. J. Linn. Soc. 162(1): 35 (2010). **(Figure II.15)** — *Hymenolepis mucronata* Fée, Mém. Foug., 5. Gen. Filic. 82, t.6 (1852); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 102 (1944). — *Belvisia mucronata* (Fée) Copel., Gen. Fil. 192 (1947); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 28 (1998). *Acrosticum spicatum* auct. non L.f.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885).
Ecology: Epiphytic, sometimes lithophytic, on roadsides, on *Ficus* sp., *Mangifera indica* and other trees in forest, from c. 540 to 1300 m.
Distribution: Sri Lanka, Indochina, Taiwan, throughout Malesia, NE-E Australia and Pacific islands.

Distribution in Timor: Timor-Leste – Aileu, Ainaro, Bobonaro, Ermera, Liquiça, Manatuto, Manufahi, Viqueque.
Specimens: Timor-Leste – Aileu, road Aileu-Dili (36 km from Dili), [8°40′06″ S, 125°33′28″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 473 (AVE, COI00080479, L.3514550); **Ainaro**, arriving at Ainaro, coming from Maubisse, [8°59′49″ S, 125°30′18″ E], 22 January 2004, *Paiva & Silveira* T 132 (AVE, COI00080467, L.3514551); **Bobonaro**, Tapó, [9°03′05″ S, 125°16′22″ E], 17 September 2016, *Costa et al.* 186 (AVE, L.3959732); **Ermera**, near ancient forest of Mahubo, after old Ermera, descending Mount Mahubo, [8°44′03″ S, 125°20′20″ E], 19 February 2005, *Paiva, Silveira & Sousa* T 609 (AVE, COI00091850, L.3514552); roadside between Railaco and Gleno, [8°39′40″ S, 125°25′59″ E], 27 August 2016, *Costa et al.* 152 (AVE, L.3959751); **Liquiçá**, Bazartete, [Fatumasi, 8°37′34″ S, 125°22′59″ E], {Fatumasse}, May 1896, *Newton* s.n. (K); **Manatuto**, Mane Hat to Hali Manuer, [8°52′09″ S, 126°00′05″ E], 25 June 2016, *Costa et al.* 45 (AVE, L.3959752); roadside, between Soibada and Laclubar, [8°45′51″ S, 125°58′03″ E], 26 June 2016, *Costa et al.* 60 a (AVE, L.3959733); [Soibada, 8°52′ S, 125°57′ E], {Samoro (Mount Sobale)}, March 1883, *Forbes* 3902 (BM, L.3514558, LISU); [Soibada, 8°52′ S, 125°57′ E], {Mt Sobale}, 1883, *Forbes* 3942 (BM); {Samoro (Mount Sobale)}, 1883, *Forbes* 3944 (BM not found) **Manufahi**, Colmetata forest, [8°52′30″ S, 125°42′08″ E], 20 May 2017, *Costa et al.* 322 (AVE); [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, 1883, *Forbes* 3599 (BM); **Viqueque**, near the base of Mundo Perdido, [8°42′19″ S, 126°21′31″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 554 (AVE, COI00091858, L.3514553); Ossú de Cima, on cultivated ground, [8°44′24″ S, 126°22′57″ E], 12 May 2017, *Costa et al.* 313 (AVE).

Lepisorus spicatus (L.f.) Li Wang, Bot. J. Linn. Soc. 162(1): 35 (2010). **(Figure II.16)**
— *Hymenolepis spicata* (L.f.) C.Presl, Epimel. Bot. 159 (1851). Rensch, Hedwigia 74: 250 (1934); — *Belvisia spicata* (L.f.) Mirb. ex Saff., Contr. U.S. Natl. Herb. 9: 273 (1905); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 31 (1998). — *Acrostichum spicatum* L.f., Suppl. Pl. 444 (1782).
Ecology: Epiphytic on *Ficus* spp. and other trees in forests, sometimes lithophytic, from c. 900 to 1520 m.
Distribution: Paleotropical.
Distribution in Timor: Timor-Leste – Ainaro, Bobonaro, Díli, Manatuto, Manufahi, Viqueque.
Specimens: Timor-Leste – Ainaro, track to the top of Ramelau, [8°53′37″ S, 125°31′07″

E], 11 February 2005, *Paiva, Silveira & Sousa* T 460 (AVE, COI00080462); roadside between Maubisse and Turiscai, [8°48′57″ S, 125°38′39″ E], 8 April 2017, *Costa et al*. 257 (AVE, L); [Suro, 9°01′30″ S, 125°31′30″ E], {Suro, Huati Builico, faldas do Tata-Mailau}, s.d., *Cinatti* II 54 (LISC061393), Ramelau, [8°53′37″ S, 125°31′07″ E], 30 April 1932, Stein 1146 (Rensch 1934: 250); **Bobonaro**, Tapó, [9°03′05″ S, 125°16′22″ E], 17 September 2016, *Costa et al*. 187 (AVE, L.3959749); **Díli**, Manucoco, [8°15′52″ S, 125°34′30″ E], 8 August 2016, *Costa et al*. 131 b (AVE, L.3959750); **Manatuto**, roadside, between Soibada and Laclubar, [8°45′51″ S, 125°58′03″ E], 26 June 2016, *Costa et al.* 60 b (AVE, L.3959748); **Manufahi**, roadside from Maubisse to Turiscai, [8°48′54″ S, 125°41′07″ E], 7 April 2017, *Costa et al*. 246 (AVE, L); **Viqueque**, Mount Mundo Perdido, [8°43′16″ S, 126°19′56″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 524 (AVE, COI00091854, L.3513229); [8°42′45″ S, 126°20′25″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 536 a (AVE, L.3513228); Dauboruba'a, [8°41′29″ S, 126°23′16″ E], 29 October 2016, *Costa et al.* 229 (AVE, L.3959747).

Lepisorus validinervis (Kunze) Li Wang, Bot. J. Linn. Soc. 162(1): 36 (2010). — *Belvisia validinervis* (Kunze) Copel., Gen. Fil. [Copeland] 192 (1947); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 32 (1998); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 28 (2002). — *Hymenolepis validinervis* Kunze, Bot. Zeitung (Berlin) 6: 122 (1848).
Ecology: Lithophytic, especially in clefts of naked limestone rocks, sometimes terrestrial, and also epiphytic, also in rock-crevices near streams, from 1500 to 2800 m.
Distribution: Throughout Malesia, and also New Ireland, New Hebrides and New Caledonia.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Ainaro, Viqueque.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Mutis}, s.d., *Ruma* 78,107,110 (BO, n.v.); **Timor-Leste – Ainaro**, track to the top of Ramelau, [8°52′37″ S, 125°35′04″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 428 (AVE, COI00080464, L.3513062); 11 February 2005, *Paiva, Silveira & Sousa* T 459 (AVE, COI00080463, L.3513063); [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Mt Tatamailau}, 5 January 1954, *van Steenis* 18445 (BM, L.3513232, LISC061418); **Viqueque**, [Mount Mundo Perdido, 8°43′16″ S, 126°19′56″ E], {Mt Perdido (ascent of ossu)}, 23 December 1953, *van Steenis* 18307 (BM, L.3513065).

Leptochilus axillaris (Cav.) Kaulf., Enum. Filic.: 147, t.1, f.10 (1824); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 82 (1998).

Ecology: Not mentioned for Timor, but recorded as epiphyte, or rarely epilithic elsewhere in Malesia.
Distribution: From India and Indochina, throughout Malesia to W Melanesia.
Distribution in Timor: Timor-Leste – Lautém.
Specimens: Timor-Leste – Lautém, Mount Paitxau Range, near Malahara, [8°28'33" S, 127°10'31" E], 2 March 2006, *Cowie* 11073 (DNA0177870, n.v.; L.3549042).

Leptochilus decurrens Blume, Enum. Pl. Javae 2: 206 (1828); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 83 (1998).
Ecology: Not mentioned for Timor, but known to be terrestrial, low climbing and epilithic, on diverse forests, from c. 150–2500 m, mostly at higher altitudes, elsewhere in Malesia.
Distribution: Sri Lanka, India, S China, Taiwan, throughout Indochina and Malesia to W Melanesia.
Distribution in Timor: Timor-Leste – Viqueque.
Specimens: Timor-Leste – Viqueque, Mundo Perdido, c. 33 km SSW of Baucau, [8°43'16" S, 126°19'56" E], 28 September 2006, *Pinto & Santana* 52 (DNA0193423, n.v.; L.3725879).

Loxogramme avenia C.Presl, Tent. Pterid.: 215 (1836); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 101 (1944). **(Figure II.17)**
Ecology: Epiphytic, sometimes lithophytic, in forests, from 1000 to 1720 m.
Distribution: S China, Indochina, throughout Malesia to Bismarck Archipelago.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Viqueque.
Specimens: West Timor – South Central Timor, [Soe, 9°52' S, 124°17' E], {Soe}, 23 March 1925, *Smith* 2762 (K); March 1925, *Smith* 2761 (K); [Kapan, 9°44'05" S, 124°16'26" E], {S. of Kapan, rain forest Nasimetan}, 17 March 1939, *Bloembergen* 3505 (K, L.3580202); **Timor-Leste – Viqueque**, Mount Mundo Perdido, [8°43'16" S, 126°19'56" E], 16 February 2005, *Paiva, Silveira & Sousa* T 526 (AVE, COI00091855, L); Dauboruba'a, [8°41'29" S, 126°23'16" E], 29 October 2016, *Costa et al.* 215 (AVE, L.3959705).

?*Loxogramme involuta* (D.Don) C.Presl, Tent. Pterid.: 215 (1836); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 101 (1944), p.p. — *Grammitis involuta* D.Don, Prodr. Fl. Nepal. 14 (1825).

Polypodium involutum (D.Don) Mett., Fil. Hort. Bot. Lips.: 37, t.25, f.26, 27 (1856); Kuhn, Forschungsr. Gazelle 4(Farne): 10 (1889).
Ecology: Lithophytic, on mountain summit.
Distribution: Sri Lanka, India, Nepal, S China, N Thailand, Vietnam, Borneo, Java and West Timor.
Distribution in Timor: West Timor – Kupang.
Notes: Posthumus (1944: 101) cites Forbes 3594 as belonging to this species. However, that specimen belongs to *Loxogramme prominens* Alderw. Since Naumann s.n., cited below, was not found, the occurrence of this species in Timor remains to be proven.
Specimens: West Timor – Kupang, [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Taimanani Mts}, 23 May 1875, *Naumann* s.n. (Posthumus 1944: 101).

Loxogramme prominens Alderw., Bull. Jard. Bot. Buitenzorg, sér. 3, 2: 159 (1920).
Loxogramme involuta auct. non (D.Don) C.Presl: Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 101 (1944), p.p. quoad spec. Forbes 3594.
Gymnogramma involuta auct. non (D.Don) Hook.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885).
Ecology: Epiphytic, in rain forest, from 900 to 1200 m.
Distribution: Sumatra, Timor.
Distribution in Timor: Timor-Leste – **Manufahi**.
Specimens: Timor-Leste – Manufahi, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, March 1882, *Forbes* 3594 (L.3580207, LISU).

****Loxogramme scolopendrioides*** (Gaudich.) C.V.Morton, Contr. U.S. Natl. Herb. 38: 242 (1973).
Ecology: Not mentioned for Timor, but known to be epiphytic or epilithic, usually in dense evergreen forests at low altitudes, up to 300 m, in Thailand, Laos and Cambodia, or up to 500 m in Brunei Darussalam (Cicuzza et al., 2025).
Distribution: Indochina, throughout Malesia to W Melanesia and Hawaii.
Distribution in Timor: Timor-Leste – Lautém.
Specimens: Timor-Leste – Lautém, Legumau, 26 km WSW of Los Palos., [8°31′15″ S, 126°59′59″ E], 18 October 2005, *Trainor* 44 (DNA0178405, n.v.).

Microsorum commutatum (Blume) Copel., Gen. Fil.: 196 (1947). — *Polypodium commutatum* Blume, Enum. Pl. Javae 2: Add. (1828); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 98 (1944).

Ecology: Not mentioned for Timor, but known to be mainly terrestrial, sometimes a low epiphyte, often in open places, sunny or in half-shade, elsewhere in Malesia.
Distribution: Throughout Malesia and Polynesia.
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Kapan, 9°44'05" S, 124°16'26" E], {regenboschje Nasimetan ten Z. van Kapan}, 17 March 1939, *Bloembergen* 3503 (L.3566882).

Microsorum punctatum (L.) Copel., Univ. Calif. Publ. Bot. 16: 111 (1929); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 100 (1944); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 121 (1998). — *Polypodium punctatum* (L.) Sw., J. Bot. (Schrader) 1800(2): 21 (1801), nom. illeg. hom.; Rensch, Hedwigia 74: 247 (1934); Kuhn, Forschungsr. Gazelle 4(Farne): 10 (1889); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 100 (1944).
Ecology: Epiphytic, sometimes lithophytic, in forests, from 100 to 1300 m.
Distribution: Palaeotropics and subtropics.
Distribution in Timor: West Timor – Kupang**,** South Central Timor; Timor-Leste – Bobonaro, Díli, Manatuto, Viqueque.
Specimens: West Timor – Kupang, [Nonbaun, 9°54'22" S, 123°54'10" E], {Nonboen}, s.d., *Teysmann* 10679 (Posthumus 1944:100); [Taimanani Mountains, 9°57'47" S, 123°47'24" E], {Taimanani Mts}, 24 May 1875, *Naumann* s.n. (B 20 0099701); 23 May 1875, *Naumann* s.n. (B 20 0099700); **South Central Timor**, [Kapan, 9°44'05" S, 124°16'26" E], {village of Huo Konutu, 1,5 km S. of the stone of Kapan}, 10 March 1939, *Bloembergen* 3424 (BO, L.3583115); [Supul, 9°50'40" S, 124°26'49" E], {Supul}, 8 August 1967, *Kooy* 375 (L.3583120); **Timor-Leste – Bobonaro**, Tapó, [9°03'05" S, 125°16'22" E], 17 September 2016, *Costa et al.* 182 (AVE, L.3959719); **Díli**, Manucoco, [8°16'13" S, 125°34'50"], 7 August 2016, *Costa et al.* 103 (AVE, L.3959702); [8°15'57" S, 125°34'45" E], 8 August 2016, *Costa et al.* 116 (AVE, L.3959721); **Manatuto**, Soibada, Malushum, [8°51'38" S, 125°58'52" E], 25 June 2016, *Costa et al.* 22 (AVE, L.3959720); **Viqueque**, Waibua forest at the foothills of Mundo Perdido mountain, [8°43'59" S, 126°22'10" E], 12 May 2017, *Costa et al.* 307 (AVE, L).

Microsorum scolopendria (Burm.f.) Copel., Univ. Calif. Publ. Bot. 16: 112 (1929); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 127 (1998); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 45 (2002). — *Polypodium scolopendria* Burm.f., Fl. Ind.: 232 (1768); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 100 (1944).

Ecology: Lithophytic or terrestrial, sometimes epiphytic, in West Timor in mixed tropical monsoon forest, from c. 260 to 850 m.
Distribution: Palaeotropics and subtropics.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Baucau, Covalima, Lautém, Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 20a, 20b, 25a, 25b, 30a, 30b (BO n.v.); **Kupang**, [Kupang, 10°10′15″ S, 123°36′25″ E], {Koepang}, s.d., *Jacquinot* s.n. (P); **Timor-Leste – Baucau**, Waidede forest, [8°36′41″ S, 126°22′38″ E], 6 May 2017, *Costa et al.* 283 (AVE, L); **Covalima**, cultivated fields of Beiseuc on Abat-Laran, [9°20′50″ S, 125°05′48″ E], 19 April 2017, *Costa et al.* 271 (AVE, L); **Lautém**, south coast, c. 6 km west of Lore, [8°39′42″ S, 126°57′58″ E], 24 February 2006, *Cowie* 10923 (DNA0177355, n.v.; L3568627); Mount Paitxau Range, near Malahara, [8°28′33″ S, 127°10′31″ E], 1 March 2006, *Cowie* 11035 (DNA0177833, n.v.; L 3568626); **Viqueque**, road Viqueque to Baucau, before Mount Laritame, [8°46′51″ S, 126°22′36″ E], 17 February 2005, *Paiva, Silveira & Sousa* T 590 (AVE, COI00091861, L); Waid'u forest, [8°46′17″ S, 126°22′36″ E], 11 May 2017, *Costa et al.* 291 (AVE, L); roadside at the waterfall of Lui-Huno, [8°46′58″ S, 126°22′33″ E], 11 May 2017, *Costa et al.* 296 (AVE, L); Waibua forest at foothills of Mundo Perdido mountain, [8°43′59″ S, 126°22′10″ E], 12 May 2017, *Costa et al.* 301 (AVE, L); **Timor** – {without loc.}, s.d., Spanoghe s.n. (L).

***Microsorum* sp.**
Specimens: Timor-Leste – Liquiçá, roadside between Tibar and Faiten, [8°36′59″ S, 125°29′09″ E], 23 June 2016, *Costa et al.* 12 (AVE, L.3959718).

Platycerium bifurcatum subsp. ***willinckii*** (T.Moore) Hennipman & M.C.Roos, Monogr. Platycerium: 92, f.18, pl.3 (1982); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 135 (1998). **(Figure II.18)**
Platycerium bifurcatum (Cav.) C.Chr., Index Filic. 496 (1906); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 107 (1944).
Platycerium alcicorne auct. non Desv.: Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 345 (1834); Kuhn, Forschungsr. Gazelle 4(Farne): 11 (1889).
Ecology: Epiphytic, in diverse forest types, from 250 to 730 m.
Distribution: Java to Lesser Sunda Islands (Lombok, Bali, Sumbawa, Timor).
Distribution in Timor: West Timor – Belu, Kupang, South Central Timor; Timor-Leste – Baucau, Bobonaro, Díli, Ermera, Viqueque.

Notes: Posthumus (1944: 107) cited a specimen Teysman 10693, which is actually Teysman 10683.
Specimens: West Timor – Belu, [Mount Lakaan, 9°06'24" S, 125°03'41" E], {Lakaan}, 21 July 1968, *Schmutz* 2232 (L.3584833); **Kupang**, [Babau, 10°06'04" S, 123°47'41" E], {Babawn}, 1908, *Teysmann* 16425 (BO); [Nonbaun, 9°54'22" S, 123°54'10" E], {Nonbaun}, 1908, *Teysmann* 10674 (BO); s.d., *Teysmann* 10633 (BO); [Obenaik, 9°52'06" S, 124°00'09" E], {village of Abe Naik (or Obe Naik)}, 2 March 1939, *Bloembergen* 3343 (BO); [Taimanani Mountains, 9°57'47" S, 123°47'24" E], {Taimanani Mts}, 1875, *Naumann* s.n. (Posthumus 1944: 107); **South Central Timor**, [Nuaf Nefomasi, 9°33'38" S, 124°13'48" E], {Naépesu-Mutis}, 4 July 1968, *Schmutz* 2332 (L.3584837); **Timor-Leste – Baucau**, road Viqueque to Baucau, Bercoli, [8°36'51" S, 126°22'58" E], 17 February 2005, *Paiva, Silveira & Sousa* T 592 (AVE, COI00091860, L.3584816); **Bobonaro**, roadside from Balibo to Maliana, [8°57'23" S, 125°04'39" E], 16 September 2016, *Costa et al.* 176 (AVE, L.3959790); **Díli**, Dare, [8°35'38" S, 125°34'07" E], 22 July 2016, *Costa et al.* 84 (AVE, L.3959789); **Ermera**, roadside between Railaco and Gleno, [8°41'03" S, 125°24'46" E], 27 August 2016, *Costa et al.* 154 (AVE, L.3959788); **Viqueque**, [Uato-Carabau, 8°41'19" S, 126°40'09" E], {Uato-Carabau}, 22 December 1953, *van Steenis* 18222 (L.3584829, LISC061420); **Timor** (loc. not specified) – {without loc.}, s.d., *Spanoghe* 364 (L.3584842); s.d., *Spanoghe* 178 (L.3584843, L3584820); s.d., *Teysmann* 10683 (BO, L.3584819); s.d., *Teysmann* s.n. (BO); s.d., *Gaudichaud* s.n. (Posthumus 1944: 107).

Platycerium coronarium (J.Koenig) Desv., Mém. Soc. Linn. Paris 6(3): 213 (1827); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 49 (2002).
Ecology: Epiphytic on trees in mixed tropical monsoon forest, c. 600 m.
Distribution: Indochina, Peninsular Malaysia, Singapore, Borneo, Sumatra, Timor and Philippines (Luzon, Mindanao).
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 34, 55 (BO, n.v.).

Pyrrosia abbreviata (Zoll.) Moritzi Tagawa, Acta Phytotax. Geobot. 25(4-6): 180 (1973); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 150 (1998).
Ecology: Epiphytic, on *Ficus* spp., *Mangifera indica*, etc., in forests, from 660 to 1290 m.
Distribution: Sumatra, Java and Lesser Sunda Islands.
Distribution in Timor: Timor-Leste – Díli, Ermera, Lautém, Manatuto, Viqueque.

Specimens: Timor-Leste – Díli, Manucoco, [8°16′04″ S, 125°34′51″ E], 8 August 2016, *Costa et al.* 112 (AVE, L.3959783); Atauro Island, east slope near crest of Mount Manucoco ridge., [8°16′10″ S, 125°34′27″ E], 15 May 2015, *Cowie & Santana* 13777 (DNA0270303, n.v.); **Ermera**, near ancient forest of Mahubo, after old Ermera, [8°44′03″ S, 125°20′20″ E], 19 February 2005, *Paiva, Silveira & Sousa* T 597 (AVE, COI00091849, L.3598807); **Lautém**, Mount Paitxau Range, near Malahara, [8°28′33″ S, 127°10′31″ E], 2 March 2006, *Cowie & Santana* 11068 (DNA0177865, n.v.; L.3595672); **Manatuto**, roadside, between Soibada and Laclubar, [8°45′51″ S, 125°58′03″ E], 26 June 2016, *Costa et al.* 63 (AVE, L.3959784); **Viqueque**, Waibua forest at foothills Mundo Perdido mountain, [8°43′59″ S, 126°22′10″ E], 12 May 2017, *Costa et al*. 305 (AVE, L).

Pyrrosia christii (Giesenh.) Ching, Bull. Chin. Bot. Soc. 1: 58 (1935); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 53 (2002).
Ecology: Epiphytic, in montane habitats, 1600 –1800 m.
Distribution: Borneo and Lesser Sunda Islands (Timor).
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 85 (BO, n.v.).

Pyrrosia lanceolata (Wall.) Farw. Amer. Midl. Naturalist 12: 245 (1930); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 161 (1998).
Cyclophorus adnascens (Sw.) Desv., Mag. Neuesten Entdeck. Gesammten Naturk. Ges. Naturf. Freunde Berlin 5: 300 (1811); Rensch, Hedwigia 74: 248 (1934).
Cyclophorus lanceolatus (L.) Alston, J. Bot. 69: 102 (1931); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 104 (1944).
Polypodium varium L., Sp. Pl. : 1090 (1753); Kuhn, Forschungsr. Gazelle 4(Farne): 10 (1889).
Ecology: Epiphytic, sometimes lithophytic, on *Mangifera indica*, *Ficus* spp., on roadsides and in coffee plantations and forests, from c. 430 to 1170 m.
Distribution: Paleotropical.
Distribution in Timor: West Timor – Kupang, South Central Timor; Timor-Leste – Aileu, Ainaro, Bobonaro, Covalima, Díli, Ermera, Lautém, Liquiça, Manatuto, Viqueque.
Specimens: West Timor – Kupang, [Bioba, 9°35′ S, 123°55′ E], {Bioba}, 6 March 1939, *Bloembergen* 3411 (BO, fide Posthumus, not found); [Nonbaun, 9°54′22″ S, 123°54′10″ E], {Nonboen}, s.d., *Teysmann* 10684 (Posthumus 1944: 104 – 105); [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Taimanani Mts}, 24 May 1875, *Naumann* s.n.

(Posthumus 1944: 104); **South Central Timor**, [Kapan, 9°44'05" S, 124°16'26" E], {rain forest, Nasi Metan, south of Kapan}, 17 March 1939, *Bloembergen* 3509 (L.3611387); **Timor-Leste – Aileu**, Asumau, [8°36'51" S, 125°39'51" E], 25 September 2016, *Costa et al.* 205 (AVE, L.3959759); roadside between Aleu and Maubisse, [8°48'16" S, 125°35'31" E], 7 April 2017, *Costa et al.* 238 (AVE, L); **Ainaro**, arriving at Ainaro, coming from Maubisse, [8°59'49" S, 125°30'18" E], 22 January 2004, *Paiva & Silveira* T 133 (AVE, COI00092266, L.3611380); **Bobonaro**, Marobo, [8°59'18" S, 125°19'58" E], 17 September 2016, *Costa et al.* 191 (AVE, L.3959692); **Covalima**, roadside of the Niguir, [9°20'45" S, 125°04'32" E], 19 April 2017, *Costa et al.* 270 (AVE, L); **Díli**, Dare, [8°35'39" S, 125°34'04" E], 22 July 2016, *Costa et al.* 86 (AVE, L.3959695); Manucoco, [8°16'04" S, 125°34'51" E], 8 August 2016, *Costa et al.* 111 (AVE, L.3959694); 8 August 2016, *Costa et al.* 113 (AVE, L.3959693); [8°15'52" S, 125°34'30" E], 10 August 2016, *Costa et al.* 137 (AVE, L.3959699); **Ermera**, roadside between Railaco and Gleno, [8°41'03" S, 125°24'46" E], 27 August 2016, *Costa et al.* 155 (AVE, L.3959696); roadside between Gleno and Ermera, [8°44'47" S, 125°26'16" E], 28 August 2016, *Costa et al.* 168 (AVE, L.3959697); [Ermera, 8°45'08" S, 125°23'49" E], {Ermera}, May 1896, *Newton* s.n. (K); **Lautém**, Mehara area, near Los Palos, [8°25'16" S, 127°06'42" E], 2 October 2005, *Cowie & Xavier* 10701 (DNA0176975, n.v.); Bauro area, near Los Palos, [8°25'53" S, 127°02'25" E], 29 August 2005, *Trainor* 37 (DNA0179055, n.v.); **Liquiçá**, Bazartete, [Fatumasi, 8°37'00" S, 125°22'59" E], {Fatumasse}, May 1896, *Newton* s.n. (K); **Manatuto**, roadside, between Soibada and Laclubar, [8°46'33" S, 125°57'52" E], 26 June 2016, *Costa et al.* 57 (AVE, L.3959698); **Viqueque**, near the base of Mundo Perdido, [8°42'19" S, 126°21'31" E], 16 February 2005, *Paiva, Silveira & Sousa* T 555 (AVE, COI00091859, L.3611379); Wabua forest at the foothills of Mundo Perdido Mountain, [8°43'59" S, 126°22'10" E], 12 May 2017, *Costa et al.* 306 (AVE, L).

Pyrrosia longifolia (Burm.f.) C.V.Morton, J. Wash. Acad. Sci. 36: 168 (1946); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 163 (1998). **(Figure II.19)**
Cyclophorus acrostichoides (Forst.) C.Presl, Epimel. Bot. 130 (1851); Rensch, Hedwigia 74: 248 (1934).
Ecology: Epiphytic, sometimes lithophytic, on *Morinda* sp., *Acacia* sp. and other trees, near the sea, from 0 to 930 m.
Distribution: Paleotropical.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Covalima, Viqueque.

Specimens: West Timor – South Central Timor, [Nikiniki, 9°48′49″ S, 124°28′35″ E], {Niki-Niki, Soepoel}, 31 March 1932, *Stein* 1085 (Rench 1932: 248); [Oekiu, 9°56′45″ S, 124°31′09″ E], {Oëkiu}, 24 February 1968, *Kooy* 419 (L.3611620); **Timor-Leste – Covalima**, Beiseuc plantation, [9°20′50″ S, 125°05′48″ E], 19 April 2017, *Costa et al.* 272 (AVE, L); edge of Salele sea, [9°24′38″ S, 125°10′42″ E], 20 April 2017, *Costa et al.* 275 (AVE, L); Suai area, south coast, [9°18′10″ S, 125°18′28″ E], 11 December 2011, *Graham* 025 (DNA0213038, n.v.); [Suai, 9°19′46″ S, 125°16′11″ E], {Suai}, 25 July 1962, *Cinatti* IV 357 (L, LISC061424); **Viqueque**, Naboruc, between Viqueque and Beaco, [8°52′53″ S, 126°22′31″ E], 15 February 2005, *Paiva, Silveira & Sousa* T 500 (AVE, COI00080472, L.3611612); roadside of Urulita, [8°46′21″ S, 126°22′11″ E], 11 May 2017, *Costa et al.* 290 (AVE, L); roadside of the Logo-Bere, [8°42′59″ S, 126°21′58″ E], 12 May 2017, *Costa et al.* 309 (AVE, L).

Pyrrosia penangiana (Hook.) Holttum, Rev. Fl. Malaya 2: 146, f.62 (1955); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 166 (1998).
Cyclophorus mollis (Kunze) C.Presl, Epimel. Bot.: 131 (1851); Rensch, Hedwigia 74: 249 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 105 (1944).
Polypodium molle (Kunze) Mett., Abh. Senckenberg. Naturf. Ges. 2(1): 128, n. 261 (1856); Kuhn, Forschungsr. Gazelle 4(Farne): 11 (1889).
Ecology: Epiphytic, sometimes lithophytic, on roadsides, in forests, from c. 100 to 1570 m.
Distribution: Sri Lanka, Indochina, Peninsular Malaysia, Sumatra, Java and Lesser Sunda Islands.
Distribution in Timor: West Timor – Belu, Kupang; Timor-Leste – Baucau, Viqueque.
Specimens: West Timor – Belu, [Lahurus, 9°04′35″ S, 125°02′50″ E], {Lahurus}, 20 June 1968, *Schmutz* 2230 (BO, L.3607252); [Mount Lakaan, 9°06′24″ S, 125°03′41″ E], {Ren Lakaan}, 21 June 1968, *Schmutz* 2253 (L.3607253); **Kupang**, [Nonbaun, 9°54′22″ S, 123°54′10″ E], {Nonbaun}, 1908, *Teysmann* 16420 (BO); [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Taimanani Mts}, 24 May 1875, *Naumann* s.n. (B, fide Posthumus, not found); **Timor-Leste – Baucau**, foothills of Matebian Mountain, [8°38′21″ S, 126°38′34″ E], 24 September 2016, *Costa et al.* 192 (AVE, L.3959777); **Viqueque**, Mount Mundo Perdido, [8°43′16″ S, 126°19′56″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 528 (AVE, COI00091856, L.3607249); Dauboruba'a, [8°41′29″ S, 126°23′16″ E], 29 October 2016, *Costa et al.* 230 (AVE, L.3959758); roadside of Waibua, [8°44′05″ S, 126°22′09″ E], 12 May 2017, *Costa et al.* 299 (AVE, L).

Pyrrosia rasamalae (Racib.) K.H.Shing., Amer. Fern J. 73(3): 78 (1983); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 171 (1998).
Ecology: Epiphytic, from c. 1220 to 1500 m.
Distribution: SW Indochina and W Malesia to Timor.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Viqueque.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33'38" S, 124°13'48" E], {Mt Mutis, Naipesu}, 4 July 1968, *Schmutz* 2326 (BM, L.3607642); **Timor-Leste – Viqueque**, Mount Mundo Perdido, [8°42'45" S, 126°20'25" E], 16 February 2005, *Paiva, Silveira & Sousa* T 531 (AVE, COI00091857, L.3607633); T 536 b (AVE).

Pyrrosia sphaerosticha (Mett.) Ching, Bull. Chin. Bot. Soc. 1: 62 (1935).
Cyclophorus warburgii (Giesenh.) C.Chr., Index Filic.: 202 (1905); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 106 (1944).
Ecology: Not mentioned for Timor, but known to be epiphytic, in forest or sometimes on exposed trees, occasionally epilithic, elsewhere in Malesia.
Distribution: Borneo, Philippines, Sulawesi, Moluccas (Bacan) and Timor.
Distribution in Timor: Timor-Leste – Díli.
Specimens: Timor-Leste – Díli, Vera Cruz, [Dare, 8°35'47" S, 125°34'35" E], {Dare}, 1911, *De Castro* 32 (BO, fide Posthumus, not found).

Selliguea enervis (Cav.) Ching, Bull. Fan Mem. Inst. Biol. Bot. 10: 239 (1941); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 200 (1998); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 54 (2002).
Ecology: Epiphytic, in montane forests, c. 1200–1600 m.
Distribution: Indochina, throughout Malesia to Melanesia.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 79, 109, 112 (BO n.v.); **Timor-Leste – Viqueque**, Dauboruba'a, [8°41'29" S, 126°23'16" E], 29 October 2016, *Costa et al.* 220 (AVE, L.3959771).

Selliguea feei Bory, Dict. Class. Hist. Nat. 6: 588 (1824); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 204 (1998). **(Figure II.20)**
Ecology: Terrestrial, on roadside, c. 1670 m.
Distribution: Sumatra, Java and Lesser Sunda Islands.
Distribution in Timor: Timor-Leste – Ainaro.

Specimens: Timor-Leste – Ainaro, Maubisse-Turiscai, at Rita-Uruho, [8°49′22″ S, 125°37′01″ E], 7 April 2017, *Costa et al.* 243 (AVE, L).

Selliguea laciniata (C.Presl) Parris, Malayan Nat. J. 50(4): 267 (1997); Hovenkamp et al. in Fl. Males., Ser. 2, 3: 210 (1998).
Ecology: Terrestrial, sometimes lithophytic on limestone, in *Eucalyptus* forests, on roadside slopes, and in other habitats, from c. 400 to 2500 m.
Distribution: Thailand, Peninsular Malaysia, Sumatra, Java, Sulawesi, Lesser Sunda Islands (Timor) and Moluccas (Seram).
Distribution in Timor: West Timor – Belu; Timor-Leste – Ainaro, Díli.
Specimens: West Timor – Belu, [Mount Lakaan, 9°06′24″ S, 125°03′41″ E], {Ren Lakaan}, 21 June 1968, *Schmutz* 2265 (L.360881); 21 June 1968, *Schmutz* 2245 (L.3608811); **Timor-Leste – Ainaro**, returning from Ramelau, [8°53′37″ S, 125°31′07″ E], 17 January 2004, *Paiva & Silveira* T 56 (AVE, COI00092268); Maubisse-Hato Builico, [8°52′53″ S, 125°31′44″ E], 10 February 2005, *Paiva, Silveira & Sousa* T 390 (AVE, COI00080461, L.3608809); track to the top of Ramelau, [8°52′37″ S, 125°35′04″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 416 (AVE, COI00080465, L.3608808); roadside from Maubisse to Turiscai, [8°49′22″ S, 125°37′01″ E], 7 April 2017, *Costa et al.* 241 (AVE, L); [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Mt Tatamailau}, 5 January 1954, *van Steenis* 18438 (L.3608812, LISC061422); **Díli**, Dare-Fatunaba, [8°35′39″ S, 125°34′00″ E], 31 January 2018, *Costa* 334 (AVE, L).

Psilotaceae

****Psilotum nudum*** (L.) P.Beauv., Prodr. Aethéogam.: 112 (1805).
Ecology: Epiphytic, sometimes lithophytic, in old secondary deciduous closed forest, semi evergreen closed forests, roadsides, etc., on limestone, clayey soil over limestone, etc., from c. 380 to 850 m.
Distribution: Widespread in tropics and subtropics of Old and New Worlds, extending northward to Korea and Japan.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Lautém, Viqueque.
Specimens: West Timor – Kupang, [Bioba, 9°35′ S, 123°55′ E], {village of Bioba, on West slope of Mt Timau}, 4 March 1939, *Bloembergen* 3362 (L.3490919); **Timor-Leste – Lautém**, Ira Malaru, near Los Palos., [8°23′09″ S, 127°04′26″ E], 7 October 2005, *Cowie & Trainor* 10850 (DNA0177244, n.v.; L.3490929); Mount Paitxau range, Malahara area.,

[8°28’33” S, 127°10’31” E], 26 October 2006, *Pinto* s.n. (DNA0193410, n.v.; L.3727222); **Viqueque**, Waidú forest, [8°46’17” S, 126°22’36” E], 11 May 2017, *Costa et al.* 294 (AVE, L); roadside of Waibua, [8°43’59” S, 126°22’10” E], 12 May 2017, *Costa et al.* 312 (AVE, L).

Pteridaceae

Acrostichum aureum L., Sp. Pl. : 1069 (1753); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 92 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 20 (2002); Nooteboom in Fl. Males., Ser. 2, 4: 142 (2012).
Chrysodium aureum (L.) Mett., Fil. Hort. Bot. Lips. 21 (1856); Kuhn, Forschungsr. Gazelle 4(Farne): 5 (1889).
Ecology: Terrestrial, on roadsides with *Arenga pinnata*, *Aleurites moluccana*, *Alstonia scholaris*, *Corypha* sp., on thermal waters and near water runoff, in sandy soils, from 0 to 800 m.
Distribution: Pantropical and subtropical (Japan, South Africa).
Distribution in Timor: West Timor – Kupang; Timor-Leste – Bobonaro, Covalima, Liquiça, Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 6, 9 (BO, n.v **); Kupang**, [Pariti, 10°00’53” S, 123°44’41” E], {Pariti}, 24 May 1875, *Naumann* s.n. (Posthumus 1944: 92); 21 May 1875, *Naumann* s.n. (B 20 0001248); 22 May 1875, *Naumann* s.n. (B 20 0001247; B 20 0001249); **Timor-Leste – Bobonaro**, Marobo, [8°59’18” S, 125°19’58” E], 17 September 2016, *Costa et al.* 190 (AVE, L.3959701); **Covalima**, in Wetaba, [9°25’55” S, 125°06’39” E], 18 April 2017, *Costa et al.* 267 (AVE, L); **Liquiçá**, roadside between Tibar and Faiten, [8°36’59” S, 125°29’09” E], 23 June 2016, *Costa et al.* 4 (AVE); **Viqueque**, near the thermal water of Ira-Amu, [8°49’48” S, 126°19’04” E], 13 May 2017, *Costa et al.* 314 (AVE, L); **Timor** (loc. not specified) – {without loc.}, s.d., *Spanoghe* s.n. (L0316912).

Acrostichum speciosum Willd., Sp. Pl., ed. 4. 5: 117 (1810); Teysmann, Natuurk. Tijdschr. Ned.-Indië 34: 503 (1874); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 92 (1944).
Ecology: Mangrove fern.
Distribution: From Madagascar troughout tropical Asia and Australia to Micronesia.
Distribution in Timor: West Timor– loc. not specified.
Specimens: West Timor – {without loc.}, s.d., Teysmann s.n. (Posthumus 1944: 92).

Adiantum capillus-veneris L., Sp. Pl. : 1096 (1753); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 84 (1944).
Ecology: Terrestrial, or lithophytic on limestone, on roadsides, from 40 to 750 m.
Distribution: Subcosmopolitan (throughout tropical, subtropical, and warm temperate regions).
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Baucau.
Specimens: West Timor – South Central Timor, [Soe, 9°52′ S, 124°17′ E], {Soe}, 18 November 1935, *De Voog* 2443 (BO, fide Posthumus, not found); [Nikiniki, 9°48′49″ S, 124°28′35″ E], {Bone (Niki-Niki)}, 7 May 1967, *Kooy* 280 (L.3499524); **Timor-Leste – Baucau**, roadside of Watabo'o, [8°26′40″ S, 126°28′09″ E], 7 May 2017, *Costa et al.* 288 (AVE, L); roadside of Teulale, [8°27′37″ S, 126°27′18″ E], 7 May 2017, *Costa et al.* 289 (AVE, L).

Adiantum caudatum L., Mant. Pl. Altera: 308 (1771); Kuhn, Forschungsr. Gazelle 4(Farne): 4 (1889); Rensch, Hedwigia 74: 242 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 85 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 22 (2002).
Adiantum rhizophorum auct. non Sw.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885).
Ecology: Lithophytic on limestone, sometimes terrestrial, in soil rich in organic matter of forests, from 140 to 1720 m.
Distribution: Throughout Old World tropics.
Distribution in Timor: West Timor – Kupang, South Central Timor; Timor-Leste – Aileu, Díli, Lautém, Manatuto, Manufahi, Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 38 (BO, n.v **); Kupang**, [Fatuleu, 9°54′34″ S, 123°51′13″ E], {Sillu, km 53 kecamatan Fatule'u}, 18 February 1982, *Wiriadinata* 2971 (BO, L.3502798); [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Taimanani Mts}, 23 May 1875, *Naumann* s.n. (B 20 0003249; B 20 0003252); 24 May 1875, *Naumann* s.n. (B 20 0003249a; B 20 0003261); 27 May 1875, *Naumann* s.n. (Rensch 1934: 242); **South Central Timor**, [Soe, 9°52′ S, 124°17′ E], {Soe}, February 1929, *Walsh* 96 (BM); [Kapan, 9°44′05″ S, 124°16′26″ E], {Noil Bisnain near Kapan}, 18 March 1939, *Bloembergen* 3534 (BO, L.3499243); **Timor-Leste – Aileu**, edge of the Buklelu river, [8°36′48″ S, 125°31′57″ E], 1 April 2017, *Costa et al.* 234 (AVE, L); **Díli**, Maquili, [8°16′28″ S, 125°35′23″ E], 7 August 2016, *Costa et al.* 88 (AVE, L.3959637); Manucoco, [8°16′15″ S, 125°34′56″ E], 7 August 2016, *Costa et al.* 97 (AVE, L.3959636); 7 August

2016, *Costa et al.* 98 (AVE, L.3959638); **Lautém**, [Muapitine, 8°29′51″ S, 127°06′00″ E], {Muapitine, plateau of Fuiloro (Lautem)}, 19 December 1953, *van Steenis* 18144 (BM, L.3499241, LISC061400); **Manatuto**, road Metinaro-Manatuto, at Beheda, [8°29′38″ S, 125°57′17″ E], 26 February 2005, *Paiva, Silveira & Pratas* T 653 (AVE, COI00080469, L.3499215); **Manufahi**, Betano area, south coast, [9°09′29″ S, 125°45′14″ E], 15 December 2011, *Graham* 088 (DNA0213137, n.v.); [Turiscai, 8°49′22″ S, 125°42′27″ E], {Turskain}, 1883, *Forbes* 3941 (Posthumus 1944: 85); **Viqueque**, Mount Mundo Perdido, [8°43′16″ S, 126°19′56″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 518 (AVE, COI00080485, L.3499216); Waidú forest, [8°46′17″ S, 126°22′36″ E], 11 May 2017, *Costa et al.* 293 (AVE, L); Timor – {without loc.}, s.d., Anonymous s.n. (P01294821).

Adiantum diaphanum Blume, Enum. Pl. Javae 2: 215 (1828); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 85 (1944).
Ecology: According to the notes of a single specimen, in Timor, this species is lithophytic, in forest often dominated by *Dacrycarpus imbricatus* and mixed montane rain forest, from 1200 to 2060 m. In other territories, the species is observed more often on earthy banks.
Distribution: SE China, Vietnam, Malesia, NE and SE coast of Australia to Polynesia and New Zealand.
Distribution in Timor: Timor-Leste – Ainaro, Manatuto, Manufahi, Viqueque.
Specimens: Timor-Leste – Ainaro, Maubisse-Hato Builico, [8°52′53″ S, 125°31′44″ E], 10 February 2005, *Paiva, Silveira & Sousa* T 389 (AVE, COI00080442, L.3505337); **Manatuto**, [Soibada, 8°52′ S, 125°57′ E], {Samoro (Mount Sobale)}, 1883, *Forbes* 3864 (BO, BM, L3505343); **Manufahi**, between Hato-Udo and Same, Lihu Lolo waterfall, [8°55′09″ S, 125°36′46″ E], 23 January 2004, *Paiva & Silveira* T 166 (AVE, COI00080448, L.3505338); **Viqueque**, Mundo Perdido, c. 33 km SSW of Baucau, [8°43′16″ S, 126°19′56″ E], 28 September 2006, *Pinto & Santana* 54 (DNA0193424, n.v.; L.3505336); [Mount Mundo Perdido, 8°43′16″ S, 126°19′56″ E], {Mt Perdido (ascent of Ossu)}, 23 December 1953, *van Steenis* 18271 (BM, BO, L.3505341, LISC061401).

Adiantum edgeworthii Hook., Sp. Fil. 2: 14, t.81B (1851); Rensch, Hedwigia 74: 242 (1934).
Ecology: Not mentioned for Timor, but known to be terrestrial, in deciduous or evergreen forests, up to 1100 m, in Thailand, Laos and Cambodia.

Distribution: NE India, northern Myanmar, China (north to Manchuria), Thailand, Vietnam, Taiwan, Japan, Philippines, Timor.
Distribution in Timor: Timor-Leste – Ainaro, Ermera, Manufahi.
Specimens: Timor-Leste – Ainaro, Ramelau [8°54′23″ S, 125°29′35″ E], {Ramelau}, 30 April 1932, Stein 1158 (Posthumus 1944: 85); – **Ermera**, [Ermera, 8°45′08″ S, 125°23′49″ E], {Hermera}, s.d., *Newton* s.n. (K); **Manufahi**, [Turiscai, 8°49′22″ S, 125°42′27″ E], {Turskain}, 1883, *Forbes* 3527 (BO, L3505245, LISU); **Timor** (loc. not specified) – {without loc.}, s.d., *Herb Museum Paris* 115 (L3505244).

Adiantum hispidulum Sw., J. Bot. (Schrader) 1800(2): 82 (1801); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885); Rensch, Hedwigia 74: 242 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 86 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 21 (2002).
Ecology: Terrestrial, sometimes lithophytic, on roadsides, edges of streams, in the shade of coffee trees, and secondary forest, from 440 to 2060 m altitude.
Distribution: Paleotropical.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Aileu, Ainaro, Díli, Ermera, Liquiça, Manufahi.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 72, 108 (BO, n.v **); South Central Timor**, [Soe, 9°52′ S, 124°17′ E], {Soë}, March 1925, *Smith* 2326 (BM, K); [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Moetis Mts}, 22 February 1932, *Stein* 844 (Posthumus 1944: 86); 20 February 1932, *Stein* 842 (Posthumus 1944: 86); **Timor-Leste – Aileu**, Fatukhun, [8°43′41″ S, 125°33′59″ E], 17 January 2004, *Paiva & Silveira* T 43 (AVE, L.3499975); [8°38′06″ S, 125°36′45″ E], 17 January 2004, *Paiva & Silveira* T 47 (AVE, COI00080438, L.3499974); Dili to Aileu, near Saloi, [8°43′41″ S, 125°33′39″ E], 22 January 2004, *Paiva & Silveira* T 124 (AVE, COI00080440, L.3499978); Se loi kraik, [8°41′27″ S, 125°32′30″ E], 2 July 2016, *Costa et al.* 73 (AVE, L.3959640); from Díli to Aileu, after the crossroad to Remexio and Remexio, [8°37′05″ S, 125°38′25″ E], 25 September 2016, *Costa et al.* 194 (AVE, L.3959643); c. 3.2km E by S of Remexio., [8°37′14″ S, 125°41′44″ E], 4 November 2006, *Cowie* 11428 (DNA0189060, n.v.; L.3727778); [Aileu, 8°43′41″ S, 125°33′59″ E], {Bessilau, S. of Dili}, 3 January 1954, *van Steenis* 18355 (BM, L3505006, LISC061402); **Ainaro**, Maubisse-Hato Builico, [8°52′53″ S, 125°31′44″ E], 10 February 2005, *Paiva, Silveira & Sousa* T 383 (AVE, L.3499977); roadside of Maubisse, [8°49′39″ S, 125°36′05″ E], 8 April 2017, *Costa et al.* 259 (AVE, L); [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Ramelau}, 1934, *Stein* 1154 (Posthumus

1944: 86); 1934, *Stein* 3014 (Posthumus 1944: 86); **Díli**, Manucoco, [8°16′04″ S, 125°34′51″ E], 8 August 2016, *Costa et al.* 110 (AVE, L.3959639); Atauro Island, eastern slopes of Mount Manucoco, [8°16′10″ S, 125°34′27″ E], 13 May 2015, *Cowie & Santana* 13764 (DNA0269603, n.v.); Dare, 5 January 2019, *Costa* 342 (AVE); [Fatunaba, 8°35′47″ S, 125°34′35″ E], {Fatunaba hills}, 12 March 1883, *Forbes* 3476 (BM, BO); **Ermera**, near ancient forest of Mahubo, after old Ermera, [8°44′03″ S, 125°20′20″ E], 19 February 2005, *Paiva, Silveira & Sousa* T 603 (AVE, COI00080468, L.3499976); roadside between Railaco and Gleno, [8°39′40″ S, 125°25′59″ E], 27 August 2016, *Costa et al.* 142 (AVE, L.3959641); roadside between Gleno and Ermera, [8°44′55″ S, 125°26′18″ E], 27 August 2016, *Costa et al.* 160 (AVE, L.3959644); **Liquiçá**, Bazartete, [Fatumasi, 8°55′ S, 125°24′ E], {Fatumasse}, May 1896, *Newton* s.n. (K); [8°36′59″ S, 125°23′04″ E], {Fatumasse}, May 1896, *Newton* s.n. (K); **Manufahi**, roadside of Laclo, [8°51′28″ S, 125°41′36″ E], 20 May 2017, *Costa et al.* 321 (AVE, L); [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, 1882, *Forbes* 3593 bis (BM, L3499968).

Adiantum philippense L., Sp. Pl. : 1094 (1753); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 87 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 21 (2002). **(Figure II.21)**

Adiantum lunulatum Burm.f., Fl. Ind.: 235 (1768); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885); Kuhn, Forschungsr. Gazelle 4(Farne): 4 (1889); Rensch, Hedwigia 74: 242 (1934).

Ecology: Terrestrial, sometimes lithophytic, in damp shady places, roadsides, secondary forest, mixed monsoon forest, from 150 to 1150 m.

Distribution: Paleotropical.

Distribution in Timor: West Timor – Kupang, South Central Timor; Timor-Leste – Aileu, Ainaro, Baucau, Díli, Ermera, Liquiça, Manatuto, Manufahi, Viqueque.

Specimens: West Timor – {without loc.}, s.d., *Ruma* 28a, 28b, 32a, 32b (BO, n.v **); Kupang**, [Baun, 10°17′38″ S, 123°43′30″ E], {between Kupang and Baun}, 16 May 1875, *Naumann* s.n. (B 20 0005285); [Pariti, 10°00′53″ S, 123°44′41″ E], {Pariti}, 24 May 1875, *Naumann* s.n. (B 20 0005288);[Kupang, 10°10′15″ S, 123°36′25″ E], [Kupang, 10°10′15″ S, 123°36′25″ E],{Gartenmauer}15 May 1875, *Naumann* s.n. (Rench 1932: 242); {Kupang}, December 1985, *Yoshida* 62098 (BO); {Koepang}, 15 May 1875, *Naumann* s.n. (Rench 1932: 242, Posthumus 1944: 87); **South Central Timor**, [Soe, 9°52′ S, 124°17′ E], {Soe}, March 1925, *Put in Smith* 2311 (K); [Kapan, 9°44′05″ S, 124°16′26″ E], {rogenboschje Nasimetan ten z. van Kapan (Kupang)}, 17 March 1939, *Bloembergen*

3485 (BO); [Supul, 9°50′40″ S, 124°26′49″ E], {Supul}, 18 January 1969, *Kooy* 668 (L.3489452); **Timor-Leste** – {without loc.}, s.d., *Forbes* 2950 (BO); **Aileu**, Dili to Aileu, near Saloi, [8°43′41″ S, 125°33′39″ E], 22 January 2004, *Paiva & Silveira* T 120 (AVE, COI00080439, L.3489443); **Ainaro**, near Ainaro, Suro Craic, [8°59′49″ S, 125°30′18″ E], 23 January 2004, *Paiva & Silveira* T 155 (AVE, COI00080441); **Baucau**, road Viqueque to Baucau, Bercoli, [8°36′51″ S, 126°22′58″ E], 17 February 2005, *Paiva, Silveira & Sousa* T 593 (AVE, COI00080487, L.3489445); Waidede forest, [8°36′41″ S, 126°22′38″ E], 6 May 2017, *Costa et al.* 280 (AVE, L); **Díli**, Atauro Island, crest of ridge near Mount Manucoco, [8°16′10″ S, 125°34′27″ E], 14 May 2015, *Cowie & Santana* 13796 (DNA0269658, n.v.; L.3978189); Dare, 5 January 2019, *Costa* 340 (AVE); [Díli, 8°33′31″ S, 125°34′25″ E], {Dilly}, 28 April 1938, *Jaag* 110 (BO, L.3489448); [Fatunaba, 8°35′47″ S, 125°34′35″ E], {Fatunaba hills}, 22 January 1883, *Forbes* 3434 (BM, BO, L3489391); **Ermera**, inland from Dili, near Railako, [8°40′55″ S, 125°25′03″ E], 5 March 2006, *Cowie* 11119 (DNA0177916, n.v.; L.3489447); **Liquiçá**, roadside between Tibar and Faiten, [8°36′59″ S, 125°29′09″ E], 23 June 2016, *Costa et al.* 8 (AVE, L.3959700); **Manatuto**, road Metinaro-Manatuto, at Beheda, [8°29′38″ S, 125°57′17″ E], 26 February 2005, *Paiva, Silveira & Pratas* T 652 (AVE, COI00080488, L.3489446); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, 1883, *Forbes* 3615 (BM, BO); [Turiscai, 8°49′22″ S, 125°42′27″ E], {Rajah of Turskain}, 1883, *Forbes* 3560 (BM); **Viqueque**, Loihuno, near Viqueque, [8°46′58″ S, 126°22′33″ E], 15 February 2005, *Paiva, Silveira & Sousa* T 498 (AVE, COI00080484, L.3489444); fields around Mount Laritame, [8°41′42″ S, 126°22′42″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 571 (AVE, COI00080486); **Timor** (loc. not specified) – {without loc.}, 1921, *Anonymous* 329 (L); s.d., *Spanoghe* s.n. (L3489390), s.d., *Anonymous* s.n. (L3489392); April 1803, *Brown* s.n. (BM).

Adiantum raddianum C.Presl, Tent. Pterid.: 158 (1836).
Adiantum cuneatum Langsd. & Fisch., Pl. Voy. Russes Monde 23, t. 26 (1810); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 22 (2002).
Ecology: Savanna and mixed tropical monsoon forest, at 200–880 m.
Distribution: Native of tropical and subtropical South America, it is cultivated as ornamental and has become naturalised and even invasive in many parts of the world.
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 11, 14a, 14b (BO, n.v **); South Central Timor**, [Soe, 9°52′ S, 124°17′ E], {Soe}, February 1929, *Walsh* 52 (BM); 30 January 1929, *Walsh* 513 (BO).

Adiantum soboliferum Wall. ex Hook., Sp. Fil. 2: 13, t. 74A (1851); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 87 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 23 (2002).
Ecology: Mixed tropical monsoon forest, at 500 m.
Distribution: Paleotropical.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Manufahi.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 12, 16a, 16b (BO, n.v.); **Timor-Leste – Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Saluki, in the kingdom of Bubususu}, 1883, *Forbes* 3753 (BO, fide Posthumus, not found).

****Adiantum zollingeri*** Mett., Ann. Mus. Bot. Lugduno-Batavi 4: 280 (1869).
Ecology: Lithophytic on limestone escarpment, in forest, c. 350 m.
Distribution: S India, Sri Lanka, Indochina, Java, Sulawesi, Timor.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Lautém.
Specimens: West Timor – South Central Timor, [Soe, 9°52′ S, 124°17′ E], {Soë}, March 1925, *Smith* 2321 (BM, K); **Timor-Leste – Lautém**, [Muapitine, 8°29′51″ S, 127°06′00″ E], {Muapitine, Fuiloro}, 19 December 1953, *van Steenis* 18144 a (L.3500060).

***Adiantum* sp.**
Specimens: West Timor – Belu, [Atambua, 9°05′54″ S, 124°53′29″ E], {Dirum (Lamaknen)}, 26 May 1966, *Friedberg* 235 a (LISC061403).

Aleuritopteris anceps (Blanf.) Panigrahi, Bull. Bot. Surv. India 2: 321 (1961).
Cheilanthes farinosa auct. non (Forssk.) Kaulf.: Rensch, Hedwigia 74: 240 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 82 (1944).
Ecology: Not mentioned for Timor, but recorded as cremnophyte, on open spaces by Posthumus (1944) for Bali, Lombok and Timor.
Distribution: Sri Lanka, India, from Himalayas to Indochina and E China, south to Philippines, Java and Lesser Sunda Islands (Bali, Lombok, Timor).
Distribution in Timor: Timor-Leste – Manufahi.
Specimens: Timor-Leste – Manufahi, [Turiscai, 8°49′22″ S, 125°42′27″ E], {Turskain}, 1883, *Forbes* 4071 (L.3492307); *Forbes* 3526 (LISU).

Anogramma leptophylla (L.) Link, Fil. Spec.: 137 (1841); Rensch, Hedwigia 74: 240 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 80 (1944).

Ecology: Not mentioned for Timor, but known to occur in evergreen broad-leaved forests and stream banks, below 2900 m, in China.
Distribution: Subcosmopolitan-subtropical.
Distribution in Timor: Timor-Leste – Ainaro.
Specimens: Timor-Leste – Ainaro, [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Ramelau}, 3 May 1932, *Stein* 1177 (Posthumus 1944: 80).

****Antrophyum callifolium*** Blume, Enum. Pl. Javae 2: 111 (1828).
Ecology: Lithophytic, sometimes epiphytic, on roadsides, in forests, from 400 to 850 m.
Distribution: Tropical Asia.
Distribution in Timor: Timor-Leste – Díli, Lautém, Viqueque.
Specimens: Timor-Leste – Díli, Atauro Island, NW slope Manucoco., [8°16′10″ S, 125°34′27″ E], 19 May 2015, *Cowie & Santana* 13915 (DNA0270179, n.v.; L.3978094); Manucoco, [8°15′52″ S, 125°34′35″ E], 8 August 2016, *Costa et al.* 123 (AVE, L.3959736); **Lautém**, Mount Paitxau Range, near Malahara., [8°28′33″ S, 127°10′31″ E], 1 March 2006, *Cowie* 11043 (DNA0177841, n.v.; L.3506625); **Viqueque**, roadside of Waibua, [8°44′05″ S, 126°22′09″ E], 12 May 2017, *Costa et al*. 300 (AVE, L).

****Antrophyum plantagineum*** Kaulf., Enum. Filic.: 197 (1824).
Ecology: Lithophytic on limestone, in shady escarpments in patches of rain forest, from 350 to 1000 m.
Distribution: Tropical Asia.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Lautém.
Specimens: West Timor – South Central Timor, [Soe, 9°52′ S, 124°17′ E], {Soe}, March 1925, *Smith* 2785 (K); 23 March 1925, *Put in Smith* 2784 (K); **Timor-Leste – Lautém**, [Muapitine, 8°29′51″ S, 127°06′00″ E], {Muapitine, Plateau of fuiloro (Lautem)}, 19 December 1953, *van Steenis* 18139 (BO, L.3506497, LISC061425).

****Antrophyum semicostatum*** Blume, Enum. Pl. Javae 2: 110 (1828).
Ecology: Epiphytic, in *Pandanus* and other forests, from 1000 to 1200 m.
Distribution: Malesia to Polynesia.
Distribution in Timor: Timor-Leste – Viqueque.
Specimens: Timor-Leste – Viqueque, near the base of Mount Laritame, [8°41′42″ S, 126°22′42″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 567 (AVE, COI00091852,

L.3493994); Dauboruba'a, [8°41'29" S, 126°23'16" E], 29 October 2016, *Costa et al.* 218 (AVE, L.3959706).

Calciphilopteris ludens (Wall. ex Hook.) Yesilyurt & H.Schneid., Phytotaxa 7: 56 (2010). — *Doryopteris ludens* (Wall. ex Hook.) J.Sm., Hist. Fil.: 189 (1875); Kuhn, Forschungsr. Gazelle 4(Farne): 5 (1889); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 82 (1944).
Ecology: Terrestrial, in shady mountain forests.
Distribution: N India, S China, Indochina and throughout Malesia.
Distribution in Timor: West Timor – Kupang.
Specimens: West Timor – Kupang, [Kupang, 10°10'44" S, 123°43'47" E], {Nordseite der Kupang Bay}, 25 May 1875, *Naumann* s.n. (B 20 0051170); [Taimanani Mountains, 9°57'47" S, 123°47'24" E], {Taimanani Mts, N of Kupang Bay, near Pariti}, 23 May 1875, *Naumann* s.n. (B 20 0051175).

Ceratopteris thalictroides (L.) Brongn., Bull. Sci. Soc. Philom. Paris 1821: 186 (1821); Kuhn, Forschungsr. Gazelle 4(Farne): 13 (1889); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 108 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 30 (2002); Nooteboom in Fl. Males., Ser. 2, 4: 139 (2012).
Ecology: Aquatic, in freshwater swamps, at 500 m.
Distribution: Pantropical and subtropical.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Baucau, Bobonaro, Lautém.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 7 (BO, n.v.); **Kupang**, [Pariti, 10°00'53" S, 123°44'41" E], {near Koepang bay, Pariti}, 25 May 1875, *Naumann* s.n. (B 20 0119109; B 20 0119110); **Timor-Leste – Baucau**, [Wailili, 8°30'50" S, 126°26'27" E], {Los Palos, Wailili}, 17 September 1962, *Cinatti* IV 289 (LISC061417); **Bobonaro**, Balibo, Batugade., [8°57'26" S, 124°58'52" E], 2 July 2014, *Westaway* 4725 (DNA0266216, n.v.); **Lautém**, Lake Iralalaro-Irasequiro area, [8°25'44" S, 127°07'23" E], 2 October 2009, *Cook & Lee* 40 (DNA0227383, n.v.); [Lautem, 8°30'53" S, 126°58'12" E], {Lautem plateau}, December 1953, *van Steenis* 18591 (L.3528486); **Timor** – {without loc.}, s.d., Cunningham s.n. (Posthumus 1944: 108).

****Cheilanthes brownii*** (Kuhn) Domin, Biblioth. Bot. 20(85-1): 133, f.26 (1915).
Ecology: Not mentioned for Timor, but known to occur in soil pockets and rock

crevices on wooded rocky hillsides or cliffs of arid and semi-arid areas, in Australia.
Distribution: Timor and Australia.
Distribution in Timor: West Timor – Belu.
Specimens: West Timor – Belu, [Mount Lakaan, 9°06′24″ S, 125°03′41″ E], {Lakaan}, 21 June 1968, *Schmutz* 2242 (L.3529829).

****Cheilanthes distans*** (R.Br.) Mett., Abh. Senckenberg. Naturf. Ges. 3: 69 (1859).
Ecology: Terrestrial, on damp slope, c. 2100 m.
Distribution: Timor, S and E Australia, extending to New Zealand and Pacific islands.
Distribution in Timor: Timor-Leste – Ainaro.
Specimens: Timor-Leste – Ainaro, track to the top of Ramelau, [8°53′10″ S, 125°33′46″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 482 (AVE, COI00080452, L.3529943).

Cheilanthes nudiuscula (R.Br.) T.Moore, Index Fil., fasc. 11: 249 (1861).
Notholaena hirsuta (Poir.) Desv., J. Bot. Agric. 1: 93 (1813); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 82 (1944).
Ecology: Lithophytic in crevices.
Distribution: China, Taiwan, Malesia, Australia and Oceania.
Distribution in Timor: Timor-Leste – Díli, Manatuto, Manufahi.
Specimens: Timor-Leste – Díli, Manucoco, [8°16′13″ S, 125°35′12″ E], 8 August 2016, *Costa et al.* 105 (AVE, L.3959666); **Manatuto**, road Metinaro-Manatuto, at Beheda, [8°29′38″ S, 125°57′17″ E], 26 February 2005, *Paiva, Silveira & Pratas* T 687 a (AVE, COI00080490, L.3529944); [Beboro, 8°32′23″ S, 126°09′44″ E], {Weboro (Batoe)}, 7 June 1929, *Walsh* 515 (Posthumus 1944: 82); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, March 1882, *Forbes* 3688 (L.3529873, LISU); {Saluki, in the kingdom of Bubususu}, 1883, *Forbes* 3937 (LISU).

Cheilanthes tenuifolia (Burm.f.) Sw., Syn. Fil. 129, 332 (1806); Rensch, Hedwigia 74: 241 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 83 (1944).
Ecology: Terrestrial, sometimes on rocks, in secondary forest, from 158 to 2300 m.
Distribution: Tropical Asia, from India and S China to Australia and Oceania, including New Zealand.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Ainaro, Díli, Lautém, Manatuto.

Specimens: West Timor – South Central Timor, [Soe, 9°52′ S, 124°17′ E], {Soë}, February 1929, *Walsh* 78 (BM); [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Moetis Mts}, 6 March 1932, *Stein* 982 (Posthumus 1944: 83); **Timor-Leste – Ainaro**, [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Ramelau}, 30 April 1932, *Stein* 1128 (Posthumus 1944: 83); 2 May 1932, *Stein* 1149 (Posthumus 1944: 83); **Díli**, Dare, [8°35′39″ S, 125°34′00″ E], 31 January 2018, *Costa* 332 [Fatunaba, 8°35′47″ S, 125°34′34″ E], {Fatunaba hills}, 30 March 1883, *Forbes* 3445 (BM001073811); **Lautém**, Mount Paitxau Range, near Malahara, [8°28′33″ S, 127°10′31″ E], 2 March 2006, *Cowie* 11080 (DNA0177877, n.v.; L.3535053); **Manatuto**, Dili to Manatuto, Beheda, [8°29′39″ S, 125°57′11″ E], 25 January 2004, *Paiva & Silveira* T 228 (AVE, L.3529942); road Metinaro-Manatuto, at Beheda, 26 February 2005, *Paiva, Silveira & Pratas* T 687 b (AVE).

Coniogramme intermedia Hieron., Hedwigia 57: 310 (1916); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 81 (1944).
Ecology: Not mentioned for Timor, but known to be terrestrial in forests in Thailand, Laos and Cambodia.
Distribution: India and Himalayas, through China to Japan and SE Russia, southwards throughout SE Asia to New Guinea.
Distribution in Timor: West Timor: South Central Timor.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Mt Moetis}, s.d., *De Voog* 2356 (Posthumus 1944: 81).

Doryopteris concolor (Langsd. & Fisch.) Kuhn in Kersten, , Reis. Ost-Afr. 3(3): 19 (1879); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 81 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 38 (2002).
Pellaea geraniifolia auct. non (Raddi) Fée: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885).
Ecology: In West Timor it was recorded from the mountains, at c. 1700 m. No data is available for Timor-Leste, except for one specimen collected near sea level.
Distribution: Pantropical.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Manufahi.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 62, 67 (BO n.v.); **Timor-Leste** – {without loc.}, s.d., *Forbes* 3888b (L.3534205); s.d., *Forbes* 4044 (Posthumus 1944: 81); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Saluki, in the kingdom of Bibiçuçu},

1883, *Forbes* 3716 (BO, fide Posthumus, not found); Betano area, south coast, [9°09′29″ S, 125°45′14″ E], 15 December 2011, *Graham* 90 (DNA0213138, n.v.).

Haplopteris elongata (Sw.) E.H.Crane, Syst. Bot. 22(3): 514 (1998 [‘1997’]). — *Vittaria elongata* Sw., Syn. Fil.: 109, 302 (1806); Carruthers in Forbes, Naturalist’s Wanderings E. Archipel.: 523 (1885); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 93 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 57 (2002).
Ecology: Epiphytic, on *Ficus* spp. and other trees, in forests and on roadsides, from c. 400 to 1600 m.
Distribution: Paleotropical.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Aileu, Bobonaro, Díli, Lautém, Manatuto, Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 69 (BO n.v.); **Timor-Leste** – **Aileu**, Asumau, [8°37′12″ S, 125°38′42″ E], 25 September 2016, *Costa et al.* 203 (AVE, L.3959787); **Bobonaro**, Tapó, [9°03′05″ S, 125°16′22″ E], 17 September 2016, *Costa et al.* 185 (AVE, L.3959786); [Lebos, 9°08′25″ S, 125°13′38″ E], {Bora (Lebos)}, 7 August 1966, *Friedberg* 460 (LISC061426); **Díli**, Manucoco, [8°15′52″ S, 125°34′30″ E], 10 August 2016, *Costa et al.* 136 (AVE, L.3959785); Atauro Island, upper slopes of Mount Manucoco, [8°16′10″ S, 125°34′27″ E], 14 May 2015, *Cowie & Santana* 13785 (DNA0269650, n.v.; L.3978209); **Lautém**, Mount Paitxau Range, near Malahara, [8°28′33″ S, 127°10′31″ E], 1 March 2006, *Cowie* 11049 (DNA0177846, n.v.; L.3637395); **Manatuto**, Mane Hat to Hali Manuer, [8°52′09″ S, 126°00′05″ E], 25 June 2016, *Costa et al.* 46 (AVE, L.3959770); roadside, between Soibada and Laclubar, [8°45′51″ S, 125°58′03″ E], 26 June 2016, *Costa et al.* 65 (AVE, L.3959769); [Soibada, 8°52′ S, 125°57′ E], {Samoro (Mount Sobale)}, 1882, *Forbes* 4094 (FI059378, L.0797043, LISU); 0 March 1882, *Forbes* 3920 (BO,L.3637446, LISU); **Viqueque**, Waibua forest at the foothills of Mundo Perdido mountain, [8°43′59″ S, 126°22′10″ E], 12 May 2017, *Costa et al.* 308 (AVE, L); Mundo Perdido, c. 33 km SSW of Baucau, [8°43′16″ S, 126°19′56″ E], 29 September 2006, *Pinto & Trainor* 102 (DNA0193443, n.v.); Dauboruba’a, [8°41′29″ S, 126°23′16″ E], 29 October 2016, *Costa et al.* 217 (AVE, L.3959768).

Haplopteris ensiformis (Sw.) E.H.Crane, Syst. Bot. 22(3): 514 (1998 [‘1997’]); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 94 (1944). — *Vittaria ensiformis* Sw., Neue Schriften Ges. Naturf. Freunde Berlin 2: 134 (1799); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 94 (1944).

Ecology: Recorded as epiphytic in Timor, for example, on *Podocarpus imbricatus*, from 390 to 1600 m.
Distribution: Paleotropical.
Distribution in Timor: Timor-Leste – Lautém, Manufahi, Viqueque.
Specimens: Timor-Leste – Lautém, Legumau, 26 km WSW of Los Palos., [8°31'15" S, 126°59'59" E], 18 October 2005, *Trainor* 36 (DNA0178407, n.v.); **Manufahi**, [Bubususu, 8°54'52" S, 125°47'00" E], {Bibiçuçu}, s.d., *Forbes* 3624 (BO); **Viqueque**, [Mount Mundo Perdido, 8°43'16" S, 126°19'56" E], {Mt Perdido (ascent of Ossú)}, 23 December 1953, *van Steenis* 18268 (BM, L.3637285, LISC061427).

****Haplopteris flexuosa*** (Fée) E.H.Crane, Syst. Bot. 22(3): 514 (1998 ['1997']).
Ecology: Epiphytic, in montane forest, at 1715 m.
Distribution: From India and Himalayas throughout China to Korea and Japan. Southwards in Indochina, N Sumatra and Philippines. With disjunct populations in Timor and New Guinea.
Distribution in Timor: Timor-Leste – Viqueque**.**
Specimens: Timor-Leste – Viqueque, Mount Mundo Perdido, [8°43'16" S, 126°19'56" E], 16 February 2005, *Paiva, Silveira & Sousa* T 525 (AVE, COI00092278, L.3637127).

Onychium japonicum (Thunb.) Kunze, Bot. Zeitung (Berlin) 6(28): 507 (1848), nom. cons.; Rensch, Hedwigia 74: 241 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 84 (1944).
Hymenophyllum dilatatum auct. non (G.Forst.) Sw.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885).
Hymenophyllum junghuhnii auct. non Bosch: Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 47 (1944).
Onychium lucidum auct. non (D.Don) Spreng.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885).
Ecology: Terrestrial, on roadsides, *Eucalyptus* forests, riversides, earthy banks, and in damp forest soil, from 200 to 2800 m.
Distribution: Subtropical and Temperate E Asia, extending W to India and Himalayas, and South to Borneo, Java, Timor and New Zealand.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Ainaro, Díli, Manatuto, Manufahi.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°31'34" S,

124°14′19″ E], {Moetis}, 15 November 1935, *De Voog* 2353 (BO); **Timor-Leste – Ainaro**, Maubisse-Hato Builico, [8°52′53″ S, 125°31′44″ E], 10 February 2005, *Paiva, Silveira & Sousa* T 379 (AVE, COI00080444, L.3578594); 10 February 2005, *Paiva, Silveira & Sousa* T 380 (AVE, COI00080443, L.3579600); roadside of Maubisse, [8°49′39″ S, 125°36′05″ E], 8 April 2017, *Costa et al*. 260 (AVE, L); [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Mt Tatamailau}, 30 April 1932, *Stein* 1174 (Posthumus 1944: 84); [8°54′14″ S, 125°29′21″ E], {Mt Tatamailau}, 5 January 1954, *van Steenis* 18432 (BM, L.3578527); **Díli**, Manucoco, [8°16′18″ S, 125°35′09″ E], 7 August 2016, *Costa et al.* 90 (AVE, L.3959792); **Manatuto**, [Soibada, 8°52′ S, 125°57′ E], {Samoro (Mount Sobale)}, 1 May 1883, *Forbes* 3866 (BO); March 1882, *Forbes* 3869 (BM, BO, L.3578599, LISU); **Manufahi**, between Hato-Udo and Same, Lihu Lolo waterfall, [8°55′09″ S, 125°36′46″ E], 23 January 2004, *Paiva & Silveira* T 164 (AVE, COI00080449, L.3578595); Hosnaco forest, [8°52′35″ S, 125°42′56″ E], 20 May 2017, *Costa et al*. 316 (AVE, L); [Turiscai, 8°49′22″ S, 125°42′27″ E], {Turscain camp}, March 1882, *Forbes* 3562 (BM, BO, L.3578600, LISU, P01261309).

Onychium siliculosum (Desv.) C.Chr., Index Filic.: 20 (1905); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 84 (1944).
Ecology: Rocky slope, c. 300 m.
Distribution: Tropical Asia.
Distribution in Timor: Timor-Leste – Díli.
Specimens: Timor-Leste – Díli, [Díli, 8°33′14″ S, 125°34′42″ E], {slope above Timor-Dilly}, 28 April 1938, *Jaag* 116 (L.3579569).

Pellaea timorensis Alderw., Bull. Dépt. Agric. Indes Néerl. 18: 11 (1908).
Pellaea paradoxa auct. non (R.Br.) Hook.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 81 (1944).
Ecology: Terrestrial.
Distribution: SE Thailand, Cambodia, Vietnam and Timor.
Distribution in Timor: Timor-Leste – Manufahi.
Specimens: Timor-Leste – Manufahi, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, 1883, *Forbes* 3918 (BM, L.3590562, LISU).

****Pityrogramma calomelanos*** (L.) Link, Handb. Gewächse 3: 20 (1833).
Ecology: Terrestrial, on roadsides, riversides, shade of coffee plantations, and in forests, from 230 to 1640 m.

Distribution: Neotropical, becoming Pantropical.
Distribution in Timor: Timor-Leste – Aileu, Ainaro, Díli, Ermera, Liquiça.
Specimens: Timor-Leste – Aileu, Asumau, [8°37′19″ S, 125°38′37″ E], 25 September 2016, *Costa et al.* 199 (AVE, L.3959775); c. 2.4 km S by W of Remexio., [8°37′13″ S, 125°38′43″ E], 4 November 2006, *Cowie & Trainor* 11414 (DNA0185573, n.v.; L.3727550); **Ainaro**, roadside between Maubisse and Turiscai, [8°49′33″ S, 125°38′10″ E], 8 April 2017, *Costa et al.* 253 (AVE, L); **Díli**, Manucoco, [8°16′18″ S, 125°35′09″ E], 7 August 2016, *Costa et al.* 93 (AVE, L.3959773); **Ermera**, roadside between Railaco and Gleno, [8°39′40″ S, 125°25′59″ E], 27 August 2016, *Costa et al.* 147 (AVE, L.3959772); roadside between Gleno and Ermera, [8°44′55″ S, 125°26′18″ E], 27 August 2016, *Costa et al.* 163 (AVE, L.3959776); **Liquiçá**, roadside between Tibar and Faiten, [8°36′59″ S, 125°29′09″ E], 23 June 2016, *Costa et al.* 2 (AVE, L.3959774).

****Pteris biaurita*** L., Sp. Pl. : 1076 (1753).
Pteris nemoralis auct. non Willd.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885).
Pteris pyrophylla auct. non Blume: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885).
Pteris quadriaurita auct. non Retz.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 90 (1944).
Ecology: Terrestrial, on roadsides, sometimes on riversides, primary closed forests on clayey soil over limestone, from 230 to 1450 m.
Distribution: Pantropical.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Bobonaro, Díli, Ermera, Lautém, Liquiça, Manufahi, Viqueque.
Specimens: West Timor – Kupang, [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Taimanani Mts}, s.d., *Naumann* s.n. (Posthumus 1944: 90); **Timor-Leste – Bobonaro**, roadside from Balibo to Maliana, [8°57′25″ S, 125°03′53″ E], 16 September 2016, *Costa et al.* 172 (AVE, L.3959624); **Díli**, Manucoco, [8°16′15″ S, 125°34′56″ E], 7 August 2016, *Costa et al.* 95 (AVE, L.3959621); [8°15′57″ S, 125°34′45″ E], 8 August 2016, *Costa et al.* 114 (AVE, L.3959622); Atauro Island, crest of ridge near Mount Manucoco, [8°16′10″ S, 125°34′27″ E], 14 May 2015, *Cowie & Santana* 13806 (DNA0269662, n.v.; L.3978088); Dare, 5 January 2019, *Costa* 339 (AVE); [Díli, 8°32′59″ S, 125°33′58″ E], {Am Berghang Oberhalb Timor-Dilly}, 28 April 1938, *Jaag* 120 (BO); 28 April 1938, *Jaag* 118 (BO); [Fatunaba, 8°35′47″ S, 125°34′34″ E], {Fatunaba hills}, 1883, *Forbes* 4005 (L.3598403); 2

March 1883, *Forbes* 3469 (BM); **Ermera**, roadside between Railaco and Gleno, [8°39′40″ S, 125°25′59″ E], 27 August 2016, *Costa et al*. 149 (AVE, L.3959620); **Lautém**, Mount Paitxau Range, near Malahara, [8°28′33″ S, 127°10′31″ E], 28 February 2006, *Cowie* 11023 (DNA0177801, n.v.; L.3600070); Legumau, 26 km WSW of Los Palos., [8°33′45″ S, 126°45′54″ E], 18 October 2005, *Trainor* 13 (DNA0178401, n.v.; L.3727088); **Liquiçá**, roadside between Tibar and Faiten, [8°36′59″ S, 125°29′09″ E], 23 June 2016, *Costa et al*. 5 (AVE, L.3959623); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Camp at Bibiçuçu}, 1883, *Forbes* 3694 (BM); {Timor, Camp at Bibiçuçu}, 1883, *Forbes* 3948 (BM); [Turiscai, 8°49′22″ S, 125°42′27″ E], {Camp at Turskain}, 1883, *Forbes* 3583 (BM); **Viqueque**, Mundo Perdido, c. 33 km SSW of Baucau, [8°43′16″ S, 126°19′56″ E], 28 September 2006, *Pinto & Santana* 76 (DNA0193431, n.v.); **Timor** (loc. not specified) – {without loc.}, s.d., *Guichenot* s.n. (P00526960); s.d., *Guichenot* s.n. (P00526961).

Pteris cretica L., Mant. Pl.: 130 (1767); Rensch, Hedwigia 74: 243 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 88 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 50 (2002).
Ecology: In West Timor it is widespread in savanna to montane habitats, from 200 to 1800 m. No data available for Timor-Leste.
Distribution: Pantropical and subtropical.
Distribution in Timor: West Timor – Belu, South Central Timor; Timor-Leste – Ainaro.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 82, 102a, 102b (BO n.v.); **Belu**, [Kota, 9°26′39″ S, 124°52′00″ E], {Kota Olim}, 26 April 1939, *Walsh* 514 (BO, fide Posthumus, not found); **South Central Timor**, [Kapan, 9°44′05″ S, 124°16′26″ E], {Kapan}, 17 March 1939, *Bloembergen* 3494 (BO, fide Posthumus, not found); **Timor-Leste – Ainaro**, [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Ramelau}, 30 April 1932, *Stein* 1157 (Posthumus 1944: 88).

Pteris ensiformis Burm.f., Fl. Ind.: 230 (1768); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 88 (1944).
Pteris crenata Sw., J. Bot. (Schrader) 1800(2): 65 (1801); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885).
Ecology: Terrestrial, on roadsides, in coffee plantations and forests and on edges of rivers, from 10 to 1110 m.
Distribution: Tropics of Asia, from N India and Sri Lanka through China and Japan (Ryukyu islands), throughout SE Asia to Polynesia, NE Australia and New Zealand North Island.

Distribution in Timor: Timor-Leste – Covalima, Díli, Ermera, Lautém, Manufahi, Viqueque.
Specimens: Timor-Leste – Covalima, edge of the Balidin river, [9°24′38″ S, 125°07′16″ E], 18 April 2017, *Costa et al.* 266 (AVE, L); **Díli**, roadside, at Dare, [8°35′31″ S, 125°34′14″ E], 22 July 2016, *Costa et al.* 77 (AVE, L.3959614); Manucoco, [8°16′13″ S, 125°34′50″ E], 7 August 2016, *Costa et al.* 102 (AVE, L.3959617); [8°16′04″ S, 125°34′51″ E], 8 August 2016, *Costa et al.* 109 (AVE, L.3959618); Atauro Island, eastern slopes of Mount Manucoco Lulo, [8°16′10″ S, 125°34′27″ E], 13 May 2015, *Cowie & Santana* 13772 (DNA0269638, n.v.; L.3978105); **Ermera**, roadside between Railaco and Gleno, [8°39′40″ S, 125°25′59″ E], 27 August 2016, *Costa et al.* 150 (AVE, L.3959616); roadside between Gleno and Ermera, [8°44′55″ S, 125°26′18″ E], 27 August 2016, *Costa et al.* 159 (AVE, L.3959615); **Lautém**, south coast, c. 6 km west of Lore, [8°40′05″ S, 126°57′44″ E], 24 February 2006, *Cowie* 10910 (DNA0177342, n.v.; L.3596939); Mount Paitxau Range, near Malahara, [8°28′33″ S, 127°10′31″ E], 2 March 2006, *Cowie* 11075 (DNA0177872, n.v.; L.3596861); **Manufahi**, roadside of Laclo, [8°51′28″ S, 125°41′36″ E], 20 May 2017, *Costa et al.* 320 (AVE, L); [Bubususu, 8°54′52″ S, 125°47′00″ E], {Saluki, in the kingdom of Bubususu}, 1883, *Forbes* 3717 (BM); **Viqueque**, near the base of Mount Laritame, [8°41′42″ S, 126°22′42″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 559 (AVE, COI00080458, L.3596945).

Pteris longipinnula Wall. ex J.Agardh, Recens. Spec. Pter.: 19 (1839); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 51 (2002).
Ecology: Open places in mixed tropical monsoon forest, c. 600 m.
Distribution: S. India and Malesia.
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 23a, 23b, 35a, 35b (BO n.v.).

****Pteris moluccana*** Blume, Enum. Pl. Javae 2: 208 (1828).
Ecology: Not mentioned for Timor.
Distribution: Timor, Moluccas, New Guinea to Central Melanesia.
Distribution in Timor: West Timor – Kupang.
Specimens: West Timor – Kupang, [Tjamplong, 10°02′ S, 123°55′ E], {Tjamplong}, 2 March 1923, *Smith* 2445 (BM); **Timor** (loc. not specified) – {without loc.}, s.d., *Anonymous in Richard* s.n. (P01609850); s.d., *Riedlé* s.n (P00526966); s.d., *Guichenot* s.n (P00526965).

****Pteris oppositipinnata*** Fée, Mém. Soc. Sci. Nat. Strasbourg 6: 17 (1865).
Ecology: Terrestrial, in forest with humus rich soil, 730–1200 m.
Distribution: Philippines, Sulawesi, Borneo and Timor.
Distribution in Timor: Timor-Leste – Manatuto, Viqueque.
Specimens: Timor-Leste – Manatuto, Mane Hat to Hali Manuer, [8°52′09″ S, 126°00′05″ E], 25 June 2016, *Costa et al.* 38 (AVE, L); **Viqueque**, Dauboruba'a, [8°41′29″ S, 126°23′16″ E], 29 October 2016, *Costa et al.* 224 (AVE, L.3959601).

****Pteris orientalis*** Alderw., Bull. Dép. Agric. Indes Néerl. 18: 12 (1908).
Ecology: Not mentioned for Timor, but known from exposed rocky slopes in Australia.
Distribution: Timor, Moluccas, New Guinea and NE Australia.
Distribution in Timor: Timor-Leste – Díli.
Specimens: Timor-Leste – Díli, Atauro Island, 1.5 km NE of Anartutu, [8°13′06″ S, 125°36′28″ E], 19 May 2015, *Cowie & Santana* 13922 (DNA0270304, n.v.).

Pteris scabripes Wall. ex J.Agardh, Recens. Spec. Pter. 11 (1839); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 51 (2002).
Ecology: Montane habitats, from 1700 to 1800 m.
Distribution: Peninsular Malaysia and Lesser Sunda Islands (Timor).
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 66 (BO n.v.).

****Pteris tripartita*** Sw., J. Bot. (Schrader)1800(2): 67 (1801).
Ecology: Not mentioned for Timor, but known from rain forests in Australia, and lowland rainforests and swamp forests in Singapore.
Distribution: Pantropical (but regarded as introduced in the New World).
Distribution in Timor: Timor-Leste – Lautém.
Specimens: Timor-Leste – Lautém, Malahara area, La Mainana Sinkhole on Ira Sequiro, [8°28′24″ S, 127°10′45″ E], 26 October 2006, *Cowie & Santana* 11319 (DNA0185081, n.v.; L.3727106).

Pteris venulosa Blume, Enum. Pl. Javae 2: 209 (1828); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 52 (2002).
Ecology: Mixed tropical monsoon forest, at 600 m.
Distribution: N India to Malesia.

Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 27 (BO, n.v.).

Pteris venusta Kunze, Bot. Zeitung (Berlin) 6: 195 (1848); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885).
Pteris pellucida C.Presl, Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 89 (1944).
Ecology: Terrestrial, on roadsides and in shade of coffee plantations and forests, from 230 to 920 m.
Distribution: Himalayas, through S China to Taiwan, and south throughout Indochina and Malesia.
Distribution in Timor: Timor-Leste – Díli, Ermera, Liquiça, Manufahi.
Specimens: Timor-Leste – Díli, Manucoco, [8°16'13" S, 125°34'50" E], 7 August 2016, *Costa et al.* 101 (AVE, L.3959604); [8°15'57" S, 125°34'45" E], 8 August 2016, *Costa et al.* 115 (AVE, L.3959603); Dare, [8°35'39" S, 125°34'00" E], 31 January 2018, *Costa* 331 (AVE, L); **Ermera**, roadside between Gleno and Ermera, [8°44'55" S, 125°26'18" E], 27 August 2016, *Costa et al.* 158 (AVE, L.3959602); **Liquiçá**, roadside between Tibar and Faiten, [8°36'59" S, 125°29'09" E], 23 June 2016, *Costa et al.* 9 (AVE, L.3959605); **Manufahi**, [Bubususu, 8°54'52" S, 125°47'00" E], {Bibiçuçu}, 1883, *Forbes* 4049 (BM).

Pteris vittata L., Sp. Pl.: 1074 (1753); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 91 (1944); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 52 (2002).
Pteris longifolia auct. non. L.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885); Kuhn, Forschungsr. Gazelle 4(Farne): 5 (1889); Rensch, Hedwigia 74: 243 (1934).
Ecology: Terrestrial, sometimes lithophytic on limestone, on roadsides, moist slopes, and old secondary deciduous closed forest, from 20 to 2100 m.
Distribution: Widely distributed in tropics and subtropics of the Old World. Extensively introduced elsewhere, like in the Americas and Europe.
Distribution in Timor: West Timor – Kupang**;** Timor-Leste – Aileu, Ainaro, Baucau, Bobonaro, Díli, Ermera, Lautém, Liquiçá, Manatuto, Manufahi, Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 2a, 2b, 39a, 39b, 54, 56, 60a, 60b (BO n.v.); **Kupang**, [Camplong, 10°02'15" S, 123°55'24" E], {Camplong, kecamatan Fatule'u}, 23 February 1982, *Wiriadinata* 2995 (BO); [Kupang, 10°10'44" S, 123°43'47" E], {Coepang}, April 1803, *Brown* s.n. (BM); [Taimanani Mountains, 9°57'47" S,

123°47′24″ E], {Taimanani Mts}, 24 May 1875, *Naumann* s.n. (Rensch 1934: 243); **Timor-Leste – Aileu**, Fatukhun., [8°38′19″ S, 125°35′25″ E], 17 January 2004, *Paiva & Silveira* T 44 (AVE, COI00080456, L.3598708); **Ainaro**, Maubisse-Hato Builico, [8°52′37″ S, 125°35′04″ E], 10 February 2005, *Paiva, Silveira & Sousa* T 409 (AVE, COI00091865, L.3598709); roadside from Maubisse to Turiscai, [8°48′38″ S, 125°39′07″ E], 7 April 2017, *Costa et al.* 250 (AVE, L); [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Mt Tatamailau}, 4 January 1954, *van Steenis* 18396 (L.3598702); **Baucau**, roadside from Venilale to Baucau, [8°38′04″ S, 126°22′45″ E], 29 October 2016, *Costa et al.* 231 (AVE, L.3959609); **Bobonaro**, roadside from Balibo to Maliana, [8°57′25″ S, 125°03′53″ E], 16 September 2016, *Costa et al.* 173 (AVE, L.3959608); Oeleo, roadside from Bobonaro to Lolotoe, [9°02′11″ S, 125°17′06″ E], 17 September 2016, *Costa et al.* 188 (AVE, L.3959610); **Díli**, Nain Feto, [8°33′48″ S, 125°35′15″ E], 11 January 2004, *Paiva & Silveira* T 13 (AVE); Manucoco, [8°16′18″ S, 125°35′09″ E], 7 August 2016, *Costa et al.* 91 (AVE, L.3959606); Dare-Fatunaba, [8°35′39″ S, 125°34′00″ E], 5 January 2019, *Costa* 337 (AVE, L); **Ermera**, roadside between Railaco and Gleno, [8°39′40″ S, 125°25′59″ E], 27 August 2016, *Costa et al.* 146 (AVE); **Lautém**, Ira Malaru area, near Los Palos, [8°23′09″ S, 127°04′26″ E], 7 October 2005, *Cowie* 10861 (DNA0177255, n.v.; L.3598705); **Liquiçá**, roadside between Tibar and Faiten, [8°36′59″ S, 125°29′09″ E], 23 June 2016, *Costa et al.* 1 a (AVE, L.3959613); 23 June 2016, *Costa et al.* 1 b (AVE, L.3959607); **Manatuto**, Soibada, Malushum, [8°51′38″ S, 125°58′52″ E], 25 June 2016, *Costa et al.* 35 (AVE, L.3959611); roadside, between Soibada and Laclubar, a bit further ahead, [8°50′26″ S, 125°59′54″ E], 26 June 2016, *Costa et al.* 53 (AVE, L.3959612); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, 1883, *Forbes* 3690 (BM); **Viqueque**, road Viqueque-Baucau, just before Mount Laritame, [8°42′36″ S, 126°21′52″ E], 17 February 2005, *Paiva, Silveira & Sousa* T 583 (AVE, COI00080459, L.3598707); **Timor** (loc. not specified) – {without loc.}, s.d., *Anonymous* s.n. (L); s.d., *Guichenot* s.n. (P00526962); s.d., *Guichenot* s.n (P00526967); s.d., *Anonymous in Richard* s.n (P01291142); s.d., *Gaudichaud* 6 (P01291164); s.d., *Guichenot* s.n. (P00526963); s.d., *Cunningham* s.n. (BM).

***Pteris* sp.**

Specimens: Timor-Leste – Ainaro, track to the top of Ramelau, [8°52′37″ S, 125°35′04″ E], 11 February 2005, *Paiva, Silveira & Sousa* T 419 (AVE, COI00080457, L.3598901); **Lautém**, Mehara area, near Los Palos., [8°24′03″ S, 127°10′54″ E], 1 October 2005, *Cowie* 10684 (DNA0176875, n.v.; L.3598900); **Viqueque**, Mundo Perdido, c. 33 km SSW of Baucau, [8°43′16″ S, 126°19′56″ E], 28 September 2006, *Pinto & Santana* 80 (DNA0193434, n.v.); 28 September 2006, *Pinto & Santana* 79 (DNA0193433, n.v.).

Selaginellaceae

****Selaginella ciliaris*** (Retz.) Spring, Bull. Acad. Roy. Sci. Bruxelles 10(1): 231 (1843).
Ecology: On clay, margin of a river, c. 300 m.
Distribution: Tropical Asia.
Distribution in Timor: West Timor – North Central Timor.
Specimens: West Timor – North Central Timor, [Lalian, 9°11′18″ S, 124°36′30″ E], {Lalian}, 25 June 1968, *Schmutz* 2290 (L.3496860).

Selaginella inaequalifolia (Hook. & Grev.) Spring, Bull. Acad. Roy. Sci. Bruxelles 10(pt.1, mo.2): 145 (1843); Kuhn, Forschungsr. Gazelle 4(Farne): 18 (1889); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 53 (2002).
Ecology: Shaded places, in montane habitats, c. 1600 m.
Distribution: India, Bangladesh, Myanmar, N Thailand, Lesser Sunda Islands (Timor) and Sulawesi
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 71 (BO n.v.).

Selaginella plana (Desv.) Hieron., Nat. Pflanzenfam. 1(4): 703 (1901).
Selaginella caudata var. *guichenotii* Spring, Mém. Acad. Roy. Sci. Belgique : 140 (1850), as '*guichenoti*'.
Ecology: On limestone escarpment, on roadsides, in semi-evergreen and rain forests, from 350 to 420 m.
Distribution: Malesia and Melanesia. Naturalized and invasive elsewhere in the tropics.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Lautém, Liquiça, Manufahi.
Specimens: West Timor – Kupang, [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Taimanani Mts}, 24 May 1875, *Naumann* s.n. (in B according to Kuhn; not found); [Kupang, 10°10′15″ S, 123°36′25″ E], {Kupang}, December 1985, *Yoshida* 62223 (BO); **Timor-Leste – Lautém**, Malahara area near Lospalos., [8°28′00″ S, 127°10′00″ E], 1 October 2004, *Trainor* 19 a (DNA0193385, n.v.; L.3726788); [Muapitine, 8°29′51″ S, 127°06′00″ E], {Muapitine, Plateau of Fuiloro (Lautem)}, 19 December 1953, *van Steenis* 18138 (BM, BO, L.3498769, LISC061399); **Liquiçá**, roadside between Tibar and Faiten, place slightly ahead of the latter, [8°37′24″ S, 125°28′44″ E], 23 June 2016, *Costa et al*. 17

(AVE, L.3959707); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Saluki, Bibiçuçu}, March 1882, *Forbes* 3712 (BM, BO, L.3498761, LISU, P01217899); **Timor** (loc. not specified) – {without loc.}, s.d., *Guichenot* s.n. (MPU020493, type of *Selaginella caudata* var. *guichenotii* Spring, P00526997); s.d., *Guichenot* s.n. (P01217893); {without loc.}, 1848, *Thuret* s.n. (P01282403); {without loc.}, s.d., *Teysmann* 10681 (BO,L.3498760); s.d., *Anonymous* s.n. (L); {loc. unreadable}, s.d., *Teysmann* 54 (BO).

?*Selaginella rothertii Alderw., Bull. Jard. Bot. Buitenzorg, sér. 2, 7: 30 (1912).
Ecology: Mountainside, 300 m.
Distribution: Java, Timor and Moluccas (Tanimbar Islands).
Distribution in Timor: Timor-Leste – Díli.
Specimens: Timor-Leste – Díli, [Díli, 8°33′14″ S, 125°34′42″ E], {Timor-Dilly.}, 28 April 1938, *Jaag* 115 (L.3483843).

Selaginella willdenowii (Desv.) Baker, Gard. Chron. 1867(30): 783 (1867).
Ecology: Terrestrial, scrambling, moist roadsides, in shade and damp zones, from 250 to 980 m.
Distribution: Myanmar, Thailand, Indochina, S China, Peninsular Malaysia, Singapore, Sumatra, Java, Sunda Islands and Philippines.
Distribution in Timor: Timor-Leste – Ainaro, Viqueque.
Specimens: Timor-Leste – Ainaro, near Ainaro, [8°59′49″ S, 125°30′18″ E], 23 January 2004, *Paiva & Silveira* T 149 (AVE, COI00091866, L.3484145); near Ainaro, Suro Craic, [8°59′49″ S, 125°30′18″ E], 23 January 2004, *Paiva & Silveira* T 151 (AVE, COI00091867); **Viqueque**, Loihuno, near Viqueque, [8°46′58″ S, 126°22′33″ E], 15 February 2005, *Paiva, Silveira & Sousa* T 495 (AVE, COI00091868, L.3484147); road Viqueque to Baucau, before Mount Laritame, [8°46′51″ S, 126°22′36″ E], 17 February 2005, *Paiva, Silveira & Sousa* T 584 (AVE, COI00091836, L.3484146); roadside at the waterfall of Lui-Huno, [8°46′58″ S, 126°22′33″ E], 11 May 2017, *Costa et al.* 295 (AVE, L).

***Selaginella* sp.**
Specimens: West Timor – South Central Timor, [Bila, 9°41′56″ S, 124°15′03″ E], {Kali Suna, (Toibila Bila)}, s.d., *Kooy* 791 (L.3485737); {Aëfonu-Bïla}, 14 March 1969, *Kooy* 697 (L.3485741); **Timor-Leste – Lautém**, footslopes of Mount Paitxau Range near Malahara, [8°28′33″ S, 127°10′31″ E], 28 February 2006, *Cowie* 11006 (DNA0177780, n.v.; L.3485173); Malahara area, Mount Paitxau Range, [8°28′33″ S, 127°10′31″ E], 1

March 2006, *Cowie* 11429 (DNA0188288, n.v.; L.4154293).
Obs: Some specimens are sterile, others we could not get access to them.

***Selaginella* sp. A**
Specimens: Timor-Leste – Aileu, Dili to Aileu, near Saloi, [8°43'41" S, 125°33'39" E], 22 January 2004, *Paiva & Silveira* T 126 (AVE, COI00080491, L.3485722); **Manufahi**, between Hato-Udo and Same, Lihu Lolo waterfall, [8°55'09" S, 125°36'46" E], near a waterfall, 23 January 2004, *Paiva & Silveira* T 168 (AVE, COI00091840, L.3485721).
Obs: Sterile specimens.

***Selaginella* sp. B**
Specimens: Timor-Leste – Manatuto, road Metinaro-Manatuto, at Beheda, [8°29'38" S, 125°57'17" E], wet barriers of a temporary stream, 26 February 2005, *Paiva, Silveira & Pratas* T 686 (AVE, COI00091837, L.3485720).
Obs: Sterile specimens.

Tectariaceae

Arthropteris palisotii (Desv.) Alston, Bol. Soc. Brot., sér. 2, 30: 6 (1956); Hovenkamp & Leonardía in Fl. Males., Ser. 2, 4: 147 (2012).
Ecology: Climbing, on tree trunks, in montane forest, often dominated by *Dacrycarpus imbricatus*, or primary montane evergreen closed forest over limestone boulder scree, from 400 to 1200 m.
Distribution: Paleotropics.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Díli, Lautém, Viqueque.
Specimens: West Timor – Kupang, [Kupang, 10°10'15" S, 123°36'25" E], {Kupang}, s.d., *Yoshida* 62150 (BO); **Timor-Leste – Díli**, Atauro Island, crest of Mount Manucoco ridge, [8°16'10" S, 125°34'27" E], 15 May 2015, *Cowie & Santana* 13829 (DNA0270297, n.v.); **Lautém**, Mount Paitxau Range, near Malahara, [8°28'18" S, 127°11'20" E], 1 March 2006, *Cowie* 11050 (DNA0177847, n.v.; L.3501680); **Viqueque**, Dauboruba'a, [8°41'29" S, 126°23'16" E], 29 October 2016, *Costa et al.* 221 (AVE, L.3959734); Mundo Perdido, c. 33 km SSW of Baucau, [8°43'16" S, 126°19'56" E], 29 September 2006, *Pinto & Trainor* 94 (DNA0193439, n.v.); 27 September 2006, *Pinto & Santana* 18 (DNA0193377, n.v.: L.3501734).

Tectaria angulata (Willd.) Copel., Sarawak Mus. J. 2: 370 (1917); Holttum in Fl. Males., Ser. 2, 2(1): 85 (1991).
Ecology: Terrestrial, occasionally lithophytic, on roadsides, riversides and in forests, from 50 to 730 m.
Distribution: Taiwan and throughout Malesia to Melanesia.
Distribution in Timor: Timor-Leste – Covalima, Díli.
Specimens: Timor-Leste – Covalima, Fatuk-Sikun forest, [9°26'52" S, 125°05'24" E], 18 April 2017, *Costa et al.* 263, 265 (AVE, L); roadside of Lalawa, roadside between Salele to Tilomar Old Post Office, [9°20'34" S, 125°08'38" E], 19 April 2017, *Costa et al.* 274 (AVE, L); **Díli**, Manucoco, [8°16'13" S, 125°34'50" E], 7 August 2016, *Costa et al.* 99 (AVE, L.3959762); [8°15'57" S, 125°34'45" E], 8 August 2016, *Costa et al.* 117 (AVE, L.3959763).

?*Tectaria crenata Cav., Descr. Pl.: 250 (1802).
Ecology: Habitat in Timor not specified, altitude 600 m.
Distribution: From Indochina, throughout Malesia to the Pacific islands.
Distribution in Timor: West Timor – South Central Timor.
Notes: This record is based on an immature specimen that cannot be confidently identified.
Specimens: West Timor – South Central Timor, [Soe, 9°52' S, 124°17' E], {Soe}, 18 November 1935, *De Voog* 2340 (L.3647212).

Tectaria dissecta (G.Forst.) Lellinger, Amer. Fern J. 58(4): 156 (1968); Holttum in Fl. Males., Ser. 2, 2(1): 49 (1991); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 57 (2002). **(Figure II.22)** — *Dryopteris dissecta* (G.Forst.) Kuntze, Revis. Gen. Pl. 2: 812 (1891); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 51 (1944). — *Polypodium dissectum* G.Forst., Fl. Ins. Austr. 81 (1786).
Ecology: Terrestrial or lithophytic, sometimes on limestone, on roadsides and in coffee plantations and forests, up to montane habitats, from c. 200 to 1700 m.
Distribution: Tropical Asia to Polynesia.
Distribution in Timor: West Timor – South Central Timor; Timor-Leste – Aileu, Baucau, Díli, Ermera, Lautém, Manatuto, Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 65 (BO n.v.); **South Central Timor**, [Soe, 9°52' S, 124°17' E], {Soe}, March 1925, *Smith* 2430 (K); March 1925, *Smith* 2439 (K); [Kapan, 9°44'05" S, 124°16'26" E], {rain forest. Nasi Metan, z. of Kapan},

17 March 1939, *Bloembergen* 3504 (in BO fide Posthumus, not found; K; L.3612773); **Timor-Leste – Aileu**, Asumau, [8°37′12″ S, 125°38′42″ E], 25 September 2016, *Costa et al.* 201 (AVE, L.3959766); [8°36′59″ S, 125°39′42″ E], 25 September 2016, *Costa et al.* 208 (AVE, L.3959764); **Baucau**, roadside from Venilale to Baucau, [8°36′13″ S, 126°22′57″ E], 29 October 2016, *Costa et al.* 232 (AVE, L); Waidede forest, [8°36′41″ S, 126°22′38″ E], 6 May 2017, *Costa et al.* 277 (AVE, L); Manu Cailale forest, [8°36′29″ S, 126°22′30″ E], 6 May 2017, *Costa et al.* 285 (AVE, L); **Díli**, Dare, [8°35′39″ S, 125°34′00″ E], 22 July 2016, *Costa et al.* 80 (AVE, L.3959757); Manucoco, [8°16′13″ S, 125°34′50″ E], 7 August 2016, *Costa et al.* 100 (AVE, L.3959735); **Ermera**, near ancient forest of Mahubo, after old Ermera, [8°44′03″ S, 125°20′20″ E], 19 February 2005, *Paiva, Silveira & Sousa* T 606 (AVE, COI00092277, L); roadside between Railaco and Gleno, [8°39′40″ S, 125°25′59″ E], 27 August 2016, *Costa et al.* 148 (AVE, L.3959755); roadside between Gleno and Ermera, [8°44′47″ S, 125°26′16″ E], 27 August 2016, *Costa et al.* 165 (AVE, L.3959756); **Lautém**, Mount Paitxau, near Malahara, [8°28′33″ S, 127°10′31″ E], 28 February 2006, *Cowie* 11022 (DNA0177800, n.v.; L.3612785); **Manatuto**, Soibada, Malushum, [8°51′38″ S, 125°58′52″ E], 25 June 2016, *Costa et al.* 28 (AVE, L.3959754); **Viqueque**, roadside at the waterfall of Lui-Huno, [8°46′58″ S, 126°22′33″ E], 11 May 2017, *Costa et al.* 297 (AVE, L); roadside of Logo-Bere, [8°42′59″ S, 126°21′58″ E], 12 May 2017, *Costa et al.* 310 (AVE, L).

****Tectaria melanocaulos*** (Blume) Copel., Philipp. J. Sci., C 2: 416 (1907), as '*melanocaulon*'.
Ecology: Lithophytic, on roadsides, riversides, and montane forest, often dominated by *Dacrycarpus imbricatus*, from c. 400 to 1470 m.
Distribution: Sri Lanka, Taiwan, Peninsular Malaysia and throughout Malesia to New Guinea.
Distribution in Timor: Timor-Leste – Aileu, Díli, Viqueque.
Specimens: Timor-Leste – Aileu, Asumau, [8°37′19″ S, 125°38′37″], 25 September 2016, *Costa et al.* 200 (AVE, L.3959765); **Díli**, Dare-Fatunaba, [8°35′39″ S, 125°34′00″ E], 31 January 2018, *Costa* 328 (AVE, L); **Viqueque**, Mundo Perdido, c. 33 km SSW of Baucau, [8°43′16″ S, 126°19′56″ E], 27 September 2006, *Pinto & Santana* 16 (DNA0193374, n.v.; L.3723474).

****Tectaria membranacea*** (Hook.) Fraser-Jenk. & Kholia, Annot. Checkl. Ind. Pterid. 2: 392 (2018).

Ecology: Not mentioned for Timor, but recorded as lithophytic, on limestone, or as terrestrial in evergreen forests, at low altitudes, in Thailand, Laos and Cambodia.
Distribution: Sri Lanka through Indochina to China and Taiwan, and through Malesia to Melanesia and NE Australia.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Baucau.
Specimens: West Timor – Kupang, [Bone, 10°09′51″ S, 123°45′23″ E], {Bone (Niki)}, 7 May 1967, *Kooy* 279 (L.3612876); **Timor-Leste – Baucau**, near Baucau, c. 2.7 km W of Wailili., [8°30′50″ S, 126°26′27″ E], 31 October 2006, *Cowie* 11363 (DNA0185467, n.v.; L.3723470).

?Tectaria paradoxa (Fée) Sledge, Kew Bull. 27(3): 413 (1972).
Dryopteris pteroides (Retz.) Kuntze, Revis. Gen. Pl. 2: 813 (1891); Rensch, Hedwigia 74: 231 (1934).
Ecology: Not mentioned for Timor, but known from moist deciduous, semi-evergreen and evergreen forests in India
Distribution: Bangladesh, India, Sri Lanka, Lesser Sunda Islands (Timor).
Distribution in Timor: West Timor – Kupang.
Specimens: **West Timor** – Kupang, 15 May 1875, *Naumann* s.n. (B, not found).

Tectaria polymorpha (Wall. ex Hook.) Copel., Philipp. J. Sci., C 2: 413 (1907); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 61 (1944); Holttum in Fl. Males., Ser. 2, 2(1): 87 (1991).
Ecology: Not mentioned for Timor, but known from mountain slopes usually in dry places in dense forests at low to medium altitudes up to 1400 m, in Thailand, Laos and Cambodia.
Distribution: Scattered throughout West and Central tropical Asia.
Distribution in Timor: West Timor – South Central Timor.
Specimens: West Timor – South Central Timor, [Soe, 9°52′ S, 124°17′ E], {Soe}, 8 November 1935, *De Voog* 2342 (BO, fide Posthumus, not found); **Timor** (loc. not specified) – {without loc.}, s.d., *Guichenot* s.n. (Posthumus 1944: 61).

?*Tectaria sagenioides* (Mett.) Christenh., Phytotaxa 10: 58 (2010). — *Dryopteris sagenioides* (Mett.) Kuntze, Revis. Gen. Pl. 2: 813 (1891); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 52 (1944).
Ecology: Not mentioned for Timor, but known from shadowed localities, as

cremnophyte, by Posthumus (1944: 52) for LSI, and from forests, at 0 – 800 m, by Holttum in Fl. Males., Ser. 2, (1): 108 (1991).
Distribution: SE Asia.
Distribution in Timor: not specified.
Specimens: Timor (loc. not specified) – {without loc.}, s.d., *Spanoghe* s.n. (in L fide Posthumus, not found).

Tectaria siifolia (Willd.) Copel., Philipp. J. Sci., C 2: 414 (1907); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 61 (1944); Holttum in Fl. Males., Ser. 2, 2(1): 84 (1991). — *Aspidium siifolium* (Willd.) Mett., Enum. Pl. Javae 2: 143 (1828); Kuhn, Forschungsr. Gazelle 4(Farne): 9 (1889); Rensch, Hedwigia 74: 233 (1934).
Aspidium decastroi Alderw., Bull. Jard. Bot. Buitenzorg, sér. 2, 7: 3 (1912); — *Tectaria decastroi* (Alderw.) C.Chr., Holttum in Fl. Males, Ser. 2, 2(1): 83 (1991).
Ecology: Not mentioned for Timor, but known to be associated with limestone in Sumatra and the Malay Peninsula.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Díli, Lautém.
Specimens: West Timor – Kupang, [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], 2 May 1875, {Taimananigebirge}, s.d., *Naumann* s.n. (Rensch, 1832): [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Taimanani Mts}, s.d., *Naumann* s.n. (Posthumus 1944: 61); [Kupang, 10°10′15″ S, 123°36′25″ E], {near Kupang}, 15 May 1875, *Naumann* s.n. (Posthumus 1944: 61); **Timor-Leste – Díli**, Atauro Island, eastern slopes of Mount Manucoco Lulo, [8°16′10″ S, 125°34′27″ E], 13 May 2015, *Cowie & Santana* 13774 (DNA0269640, n.v.); Atauro Island, SE side of Mount Manucoco ridge, [8°16′10″ S, 125°34′27″ E], 15 May 2015, *Cowie & Santana* 13826 (DNA0269688, n.v.); [Díli, 8°33′31″ S, 125°34′25″ E], {Díli}, 1911, *De Castro* 64 (L. 0052158; isotype of *Aspidium decastroi* Alderw.); **Lautém**, south coast, c. 6 km west of Lore, [8°40′05″ S, 126°57′44″ E], 24 February 2006, *Cowie & Santana* 10912 (DNA0177344, n.v.; L.3614153) ; **Timor** (loc. not specified) – {without loc.}, s.d., *Anonymous* s.n. (L).

****Tectaria teysmanniana*** (Baker) S.Y.Dong, Phytotaxa 178(3): 226 (2014), as '*teijsmanniana*'.
Ecology: Not mentioned for Timor, but recorded on coral rock, in shade on Babar Island.
Distribution: Lesser Sunda Islands (Sumba, Flores, Timor) and Moluccas (Babar).
Distribution in Timor: Not specified.

Specimens: Timor (loc. not specified) – {without loc.}, s.d., *Spanoghe* s.n. (L).
Obs: Although Holttum has seen and identified Spanoghe's specimen above as *Heterogonium teysmannianum* (Baker) Posth. ex Holttum, Reinwardtia 1: 29 (1950), he forgot to mention the occurrence of this taxon in Timor in the same publication.

Tectaria wigmanii (Racib.) S.Y.Dong, Phytotaxa 178(3): 227 (2014). — *Heterogonium wigmanii* (Racib.) Holttum, Reinwardtia 3: 271 (1955); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 42 (2002). — *Aspidium wigmanii* Racib., Bull. Int. Acad. Sci. Cracovie 61 (1902).
Ecology: Savanna, c. 300 m.
Distribution: Sulawesi, Moluccas and Timor.
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 51 (BO n.v.).

***Tectaria* sp.**
Specimens: Timor-Leste – Lautém, Mount Paitxau Range, near Malahara, [8°28'33" S, 127°10'31" E], 1 March 2006, *Cowie* 11058 (DNA0177855, n.v.; L.3636263).

Thelypteridaceae

Amblovenatum immersum (Blume) Mazumdar, Int. J. Adv. Res. Innov. Ideas Educ. 3(2): 5060 (2017). — *Amphineuron immersum* (Blume) Holttum in B.K.Nayar & S.Kaur, Companion Handb. Ferns Brit. India 203 (1974); Holttum in Fl. Males., Ser. 2. 1(5): 547 (1981); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 24 (2002).
Ecology: Open deciduous forest, and mixed tropical monsoon forest, at 160 – 500 m.
Distribution: Malesia.
Distribution in Timor: West Timor – Kupang.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 13a, 13b, 15a, 15b (BO, n.v);
Kupang, [Tjamplong, 10°02' S, 123°55' E], {Tjamplong}, 5 March 1925, *Smith* 2432 (K).

Amblovenatum opulentum (Kaulf.) J.P.Roux, Strelitzia 23: 201 (2009). — *Amphineuron opulentum* (Kaulf.) Holttum in Fl. Males, Ser. 2, 1(5): 548 (1981); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 24 (2002).
Aspidium pteroides (Retz.) Sw., J. Bot. (Schrader) 1800(2): 33 (1801); Kuhn, Forschungsr. Gazelle 4(Farne): 9 (1889).

Dryopteris impressa (Desv.) Posth., Verh. Kon. Akad. Wetensch., Afd. Natuurk., Sect. 2, 36(5): 14 (1937); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 55 (1944).
?Dryopteris subpubescens auct. non (Blume) C.Chr.: Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 57 (1944) p.p. quoad Jaag 101.
Ecology: Savanna, at 250 m.
Distribution: E Africa, Madagascar, tropical Asia, NE Australia, Micronesia and Polynesia. Naturalised in the New World.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Díli.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 46, 50a, 50b, 53a, 53b (BO, n.v.); **Kupang**, [Kupang, 10°10′15″ S, 123°36′25″ E], {Koepang}, s.d., *Teysmann* 16416 (BO, fide Posthumus, not found); **Timor-Leste – Díli**, [Díli, 8°33′31″ S, 125°34′25″ E], {"am Berghang oberhalb Timor-Dilly"}, 28 April 1938, *Jaag* 101 (BO, L.3531427); *Jaag* 114 (L.3492686); **Timor** (loc. not specified) – {without loc.}, s.d., *Leschenault* s.n. (P01534078).
Obs: *Jaag* 101 (BO, L) is a mixed collection that requires further study. Some specimens appear to be *Amblovenatum opulentum* (Kaulf.) J.P.Roux while others appear to be *Christella subpubescens* (Blume) Holttum.

Amblovenatum decorum (Domin) S.Linds. & D.J.Middleton, Kew Bulletin, 76: 318 (2021).
Amblovenatum terminans auct. non (Holttum) J.P.Roux; Ruma, Fern[s] W. Timor E. Nusa Tenggara: 25 (2002).
Nephrodium pteroides auct. non J.Sm.: Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 522 (1885).
Ecology: Terrestrial, sometimes lithophytic on limestone, on roadsides, coffee plantations, savannas and forests, from 230 to 980 m.
Distribution: SE Asia to NE Australia and Papua New Guinea.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Ainaro, Baucau, Díli, Ermera, Lautém, Liquiçá, Manatuto, Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 43a, 43b (BO, n.v.); **Timor-Leste – Ainaro**, near Ainaro, Suro Craic, [8°59′49″ S, 125°30′18″ E], 23 January 2004, *Paiva & Silveira* T 153 (AVE, COI00092281, L.3492639); **Baucau**, Waidede forest, [8°36′41″ S, 126°22′38″ E], 6 May 2017, *Costa et al.* 281 (AVE, L); **Díli**, Manucoco, [8°16′01″ S, 125°35′00″ E], 8 August 2016, *Costa et al.* 106 (AVE, L.3959649); Dare, [8°35′39″ S, 125°34′00″ E], 31 January 2018, *Costa* 330 (AVE, L); [Fatunaba, 8°35′47″ S, 125°34′34″

E], {Fatunaba hills}, 1883, *Forbes* 4095 (L.3551296); **Ermera**, roadside between Railaco and Gleno, [8°39′40″ S, 125°25′59″ E], 27 August 2016, *Costa et al.* 151 (AVE, L.3959646); **Lautém**, near Wairoke village W of Lospalos, [8°31′03″ S, 126°58′58″ E], 30 October 2006, *Cowie & Pinto* 11426 (DNA0189057, n.v.); Mehara area, near Los Palos, [8°27′47″ S, 127°10′33″ E], 5 October 2005, *Cowie* 10803 (DNA0177158, n.v.; L.3492633); **Liquiçá**, roadside between Tibar and Faiten, [8°36′59″ S, 125°29′09″ E], 23 June 2016, *Costa et al.* 3 (AVE, L.3959645); 23 June 2016, *Costa et al.* 13 (AVE); **Manatuto**, Soibada, Malushum, [8°51′38″ S, 125°58′52″ E], 25 June 2016, *Costa et al.* 25 (AVE, L.3959647); 25 June 2016, *Costa et al.* 26 (AVE, L.3959648); 25 June 2016, *Costa et al.* 27 (AVE, L.3959650); **Viqueque**, road Viqueque to Baucau, before Mount Laritame, [8°46′51″ S, 126°22′36″ E], 17 February 2005, *Paiva, Silveira & Sousa* T 581 (AVE, COI00091863, L.3492638).

Ampelopteris prolifera (Retz.) Copel., Gen. Fil.: 144 (1947); Holttum in Fl. Males., Ser. 2. 1(5): 387 (1981). — *Dryopteris prolifera* (Retz.) C.Chr., Index Filic.: 286 (1905); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 56 (1944).
Ecology: Peaty soil, c. 400 m.
Distribution: Tropics and subtropics throughout the Old World.
Distribution in Timor: West Timor – Belu.
Specimens: West Timor – Belu, [Aroki Plain, 9°27′ S, 124°46′ E], {Aroki}, 20 May 1950, *Froideville* 1693 (L.3492178); **Timor** (loc. not specified) – {without loc.}, s.d., *Anonymous* s.n. (L).

****Chingia imponens*** (Ces.) Holttum, Kalikasan 3: 21 (1974)
Ecology: Terrestrial, on roadside, c. 1570 m.
Distribution: Lesser Sunda Islands (Timor) and New Guinea.
Distribution in Timor: Timor-Leste – Ainaro.
Specimens: Timor-Leste – Ainaro, roadside from Maubisse to Turiscai, [8°48′38″ S, 125°39′07″ E], 7 April 2017, *Costa et al.* 249 (AVE, L).

Christella arida (D.Don) Holttum in Nayar & Kaur, Companion Handb. Ferns Brit. India: 206 (1974); Holttum in Fl. Males., Ser. 2. 1(5): 555 (1981); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 32 (2002). — *Dryopteris arida* (D.Don) Kuntze, Revis. Gen. Pl. 2: 812 (1891); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 53 (1944).
Ecology: Not mentioned for Timor, but known from open places, often among tall grasses, at low altitudes, less commonly at higher altitudes, elsewhere in Malesia.

Distribution: Tropical and Subtropical Asia to NE Australia.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Covalima, Lautém.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 17 (BO, n.v.); **Timor-Leste** – **Covalima**, Suai Area, South Coast, [9°18'56" S, 125°18'34" E], 10 December 2011, *Graham* 011 (DNA0212918, n.v.); **Lautém** – Ira Caupiti area, c. 10 km SSW of Tutuala, [8°23'46" S, 127°13'59" E], 19 October 2006, *Cowie* 11229 (DNA0184699, n.v.); Lake Iralalaro -Ira Sequiro area, [8°25'44" S, 127°07'23" E], 2 October 2009, *Cook & Lee* 56 (DNA0231058, n.v.); **Timor** (loc. not specified) – {without loc.}, s.d., *Gaudichaud* 18 (B fide Posthumus, not found).

Christella dentata (Forssk.) Brownsey & Jermy, Brit. Fern Gaz. 10: 338 (1973); Holttum in Fl. Males., Ser. 2. 1(5): 557 (1981). — *Dryopteris dentata* (Forssk.) C.Chr., Kongel. Danske Vidensk. Selsk. Skr., Naturvidensk. Math. Afd. ser. 8, 6: 24 (1920), nom. illeg. hom.; Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 54 (1944). — *Polypodium dentatum* Forssk., Fl. Aegypt.-Arab. 185 (1775).
Ecology: Not mentioned for Timor, but known from open or lightly shaded places, at 0 – 1500 m, elsewhere in Malesia.
Distribution: Paleotropical, since 1930 introduced in the Neotropics.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Lautém, Viqueque.
Specimens: West Timor – Kupang [Kupang, 10°10'15" S, 123°36'25" E], {Coepang}, 1803, *Brown* s.n. (BM); **Timor-Leste – Lautém**, Lospalos to Iliomar, [8°21'42" S, 126°54'05" E], 20 January 2004, *Paiva & Silveira* T 116 (AVE, COI00091839, L.3527585); **Viqueque**, fields around Mount Laritame, [8°41'42" S, 126°22'42" E], 16 February 2005, *Paiva, Silveira & Sousa* T 570 (AVE, COI00091862, L.3527584); **Timor** (loc. not specified) – {without loc.}, s.d., *Guichenot* s.n. (P fide Posthumus, not found); {without loc.}, s.d., Zippelius s.n. (Posthumus 1944: 54).

Christella hispidula (Decne.) Holttum, Kew Bull. 31: 312 (1976); Holttum in Fl. Males., Ser. 2. 1(5): 557 (1981). — *Aspidium hispidulum* Decne., Nouv. Ann. Mus. Hist. Nat. 3: 346 (1834).
Ecology: Not mentioned for Timor, but known from sheltered places, low altitudes to 1500 m, elsewhere in Malesia.
Distribution: Pantropical.
Distribution inTimor: not specified.

Specimens: Timor (loc. not specified) – {without loc.}, s.d., *Guichenot* s.n. (K, P00636792; type of *Aspidium hispidulum* Decne.); s.d., *Spanoghe* s.n (L).

Christella parasitica (L.) H.Lév., Fl. Kouy-Tchéou: 473, 475 (1915); Holttum in Fl. Males., Ser. 2. 1(5): 559 (1981); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 31 (2002).
Ecology: Not mentioned for Timor, but known from open places, mainly at low altitudes, but also to 1500 m, elsewhere in Malesia.
Distribution: Tropics and subtropics in Asia, north to S Japan and south to New Zealand.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Díli.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 3a, 3b, 3c (BO, n.v.); **Timor-Leste – Díli**, Atauro Island, [8°13′06″ S, 125°36′28″ E], 19 May 2015, *Cowie & Santana* 13815 (DNA0270306, n.v.; L.3978207).

Christella subpubescens (Blume) Holttum, Webbia 30(1): 193 (1976); Holttum in Fl. Males., Ser. 2. 1(5): 558 (1981); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 32 (2002). — *Dryopteris subpubescens* (Blume) C.Chr., Gard. Bull. Straits Settlem. 4: 390 (1929); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 57 (1944). — *Aspidium subpubescens* Blume, Enum. Pl. Javae 2: 149 (1828).
Ecology: Terrestrial, on riversides and in coffee plantations and forests, from 270 to 1200 m.
Distribution: Tropical Asia to NE Australia and W Polynesia, north to S Japan.
Distribution in Timor: West Timor – loc. not specified; Timor-Leste – Bobonaro, Díli, Lautém, Manatuto, Manufahi.
Specimens: West Timor – {without loc.}, s.d., *Ruma 4*, 6 (BO, n.v.); **Timor-Leste – Bobonaro**, Rai-fu, [8°56′59″ S, 125°05′32″ E], 16 September 2016, *Costa et al*. 178 (AVE, L.3959667); **Díli**, Dare, [8°35′39″ S, 125°34′00″ E], 22 July 2016, *Costa et al*. 79 (AVE, L.3959670); Manucoco, [8°15′52″ S, 125°34′30″ E], 8 August 2016, *Costa et al*. 134 (AVE, L.3959669); 10 August 2016, *Costa et al*. 135 (AVE); Dare, [8°35′39″ S, 125°34′00″ E], 31 January 2018, *Costa* 329 (AVE, L); Atauro Island, crest of ridge near Mount Manucoco, [8°16′10″ S, 125°34′27″ E], 14 May 2015, *Cowie & Santana* 13805 (DNA0269661, n.v.; L.3978089); [Díli, 8°33′31″ S, 125°34′25″ E], {am berghang oberhlab Timor-Dilly}, 28 April 1938, *Jaag* 101 (BO, L.3531427); **Lautém**, Mount Paitxau Range, near Malahara, [8°28′33″ S, 127°10′31″ E], 28 February 2006, *Cowie* 11026 (DNA0177824, n.v.; L.3963912); **Manatuto**, Soibada, Malushum, [8°51′38″ S, 125°58′52″ E], 25 June 2016,

Costa et al. 29 (AVE, L.3959668); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, s.d., *Forbes* 3580 (Posthumus 1944: 57); [Turiscai, 8°49′22″ S, 125°42′27″ E], {Turskain}, s.d., *Forbes* 3569 (Posthumus 1944: 57).
Obs: *Jaag* 101 (BO, L) is a mixed collection that requires further study. Some specimens appear to be *Amblovenatum opulentum* (Kaulf.) J.P.Roux while others appear to be *Christella subpubescens* (Blume) Holttum.

Christella timorensis Holttum, Kew Bull. 31(2): 316 (1976); Holttum in Fl. Males., Ser. 2, 1(5): 559 (1981).
Ecology: Terrestrial, in grasslands and along mountain torrents, on moist stony ground, roadsides, near to spring waters, and forests, from 850 to 1300 m.
Distribution: Endemic to Timor.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Aileu, Covalima, Díli, Ermera.
Specimens: West Timor – Kupang, [Bioba, 9°35′ S, 123°55′ E], {Mount Timau, western slope, village of Bioba}, 4 March 1939, *Bloembergen* 3364 (K, L.3521187); **Timor-Leste – Aileu**, Asumau, [8°37′05″ S, 125°38′25″ E], 25 September 2016, *Costa et al*. 197 (AVE, L.3959674); **Covalima**, Beiseuc plantation on Abat-Laran, [9°20′50″ S, 125°05′48″ E], 19 April 2017, *Costa et al*. 273 (AVE, L); **Díli**, Manucoco, [8°15′52″ S, 125°34′35″ E], 8 August 2016, *Costa et al*. 120 (AVE, L.3959672); **Ermera**, roadside between Railaco and Gleno, [8°39′40″ S, 125°25′59″ E], 27 August 2016, *Costa et al*. 144 (AVE, L.3959673); 27 August 2016, *Costa et al*. 145 (AVE, L.3959671).

Cyclosorus interruptus (Willd.) H.Itô, Bot. Mag. (Tokyo) 51: 714, f.9 (1937); Holttum in Fl. Males., Ser. 2, 1(5): 386 (1981). — *Dryopteris interrupta* (Willd.) Ching, Lingnan Sc. Journ. 12: 566 (1933); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 56 (1944).
Ecology: Remnant swamps, on clay soil over limestone, 500 – 1200 m.
Distribution: Pantropical.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Lautém.
Specimens: West Timor – Kupang, [Taimanani Mountains, 9°57′47″ S, 123°47′24″ E], {Taimanani Mts}, 24 May 1875, *Naumann* s.n. (Posthumus 1944: 56); [Kupang, 10°10′15″ S, 123°36′25″ E], {Koepang}, 15 May 1875, *Naumann* s.n. (B 20 0064119/20); **Timor-Leste – Lautém**, SW of Los Palos, [8°31′03″ S, 126°58′58″ E], 9 October 2005, *Cowie* 10880 (DNA0177307, n.v.; L.3531422); Lake Iralalaro-Ira Sequiro area, [8°25′44″ S, 127°07′23″ E], 2 October 2009, *Cook & Lee* 38 (DNA0231059, n.v.).

Christella papilio (C.Hope) Holttum, Companion Handb. Ferns Brit. India 208 (1974); Fl. Males. Ser. 2, 1(5) 556 (1981); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 31 (2002).
Ecology: Mixed tropical monsoon forest on sloping ground, c. 600 m.
Distribution: Himalaya, Sri Lanka, Taiwan, Thailand, Peninsular Malaysia and Timor.
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 18 (BO, n.v.).

Macrothelypteris torresiana (Gaudich.) Ching, Acta Phytotax. Sin. 8(4): 310 (1963). *Dryopteris setigera* (Blume) Kuntze, Rev. Gen. Pl. 2: 813 (1891); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 52 (1944). — *Macrothelypteris setigera* (Blume) Ching, Acta Phytotax. Sin. 8(4): 309 (1963); Holttum, Fl. Males., Ser. 2, 1(4): 349 (1981).
Ecology: Terrestrial, or lithophytic, sometimes on limestone, on roadsides, edges of streams, from 300 to 920 m.
Distribution: Throughout tropical Asia, extending north to Japan and south to Australia; also naturalized in South Africa and the New World.
Distribution in Timor: Timor-Leste – Aileu, Díli, Ermera, Liquiça, Manatuto, Manufahi.
Specimens: Timor-Leste – {without loc.}, 1883, *Forbes* 3584 (BM); **Aileu**, roadside from Buklelu to Aileu, [8°38′42″ S, 125°31′32″ E], 1 April 2017, *Costa et al.* 237 (AVE, L); **Díli**, Manucoco, [8°16′18″ S, 125°35′09″ E], 7 August 2016, *Costa et al.* 94 (AVE, L.3959626); [Díli, 8°32′59″ S, 125°33′58″ E], {am berghang oberhalb Timor-Dilly}, 28 April 1938, *Jaag* 121 (BO); **Ermera**, roadside between Railaco and Gleno, [8°39′40″ S, 125°25′59″ E], 27 August 2016, *Costa et al.* 143 (AVE, L.3959628); **Liquiçá**, roadside between the Tibar and Faiten, place slightly ahead of the latter, [8°37′24″ S, 125°28′44″ E], 23 June 2016, *Costa et al.* 15 (AVE, L.3959625); **Manatuto**, roadside, between Soibada and Laclubar, a bit further ahead, [8°50′26″ S, 125°59′54″ E], 26 June 2016, *Costa et al.* 52 (AVE, L.3959627); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {Bibiçuçu}, 1883, *Forbes* 3631 (BM).

Amauropelta beddomei (Baker) Y.H.Chang, Taiwania 64(4): 380 (2019). *Parathelypteris beddomei* (Baker) Ching in Acta Phytotax. Sin. 8(4): 302 (1963); Holttum in Fl. Males., Ser. 2, 1(5): 371 (1981). — *Dryopteris beddomei* (Baker) Kuntze, Revis. Gen. Pl. 2: 812 (1891); Rensch, Hedwigia 74: 229 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 50 (1944).

Ecology: Not mentioned for Timor, but known from mountains at 1500 – 2000 m, in rather open places, on sloping ground where there is a seepage of water, becoming more abundant with increased felling of mountain forest, elsewhere in Malesia.
Distribution: Sri Lanka and S India, through S China to Korea and Japan, and southwards throughout most of Malesia to New Guinea.
Distribution in Timor: West Timor – South Central Timor, Timor-Leste – Ainaro.
Specimens: West Timor – South Central Timor, [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Moetis}, 15 November 1935, *De Voog* 2348 (in B fide Posthumus; not found; L.3586116); {Mt Moetis}, 23 February 1935, *Stein* 855 (in B fide Posthumus, not found); [Nuaf Nefomasi, 9°33′38″ S, 124°13′48″ E], {Moetisgebirge}, 22 February 1932, *Stein* 824 (Rensch 1934: 239); **Timor-Leste – Ainaro**, [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Mt Ramelau}, 4 May 1932, *Stein* 1178 (in B fide Posthumus, not found).

Pneumatopteris callosa (Blume) Nakai, Bot. Mag. (Tokyo) 47: 179 (1933). — *Dryopteris callosa* (Blume) C.Chr., Index Filic.: 256 (1905); Rensch, Hedwigia 74: 229 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 54 (1944).
Ecology: Not mentioned for Timor, but known from near streams in forest, at 600 – 1750 m, elsewhere in Malesia.
Distribution: Throughout Malesia, except Philippines and New Guinea.
Distribution in Timor: West Timor – Kupang; Timor-Leste – Ainaro.
Specimens: West Timor – Kupang, [Kupang, 10°10′15″ S, 123°36′25″ E], {Kupang}, December 1985, *Yoshida* 62196 (BO); **Timor-Leste – Ainaro**, [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Ramelau}, 30 April 1932, *Stein* 1155 (in B fide Posthumus, not found).

Reholttumia truncata (Poir.) S.E.Fawc. & A.R.Sm., Sida, Bot. Misc. 59: 78 (2021). *Pneumatopteris truncata* (Poir.) Holttum, Blumea 21: 314 (1973); Holttum in Fl. Males., Ser. 2, 1(5): 429 (1981). — *Dryopteris truncata* (Poir.) Kuntze, Revis. Gen. Pl. 2: 814 (1891); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 57 (1944).
Ecology: Not mentioned for Timor, but known from near streams in forest, at 100 – 1200 m, elsewhere in Malesia.
Distribution: Tropical Asia and S (subtropical) China.
Distribution in Timor: West Timor – Kupang.
Specimens: West Timor – Kupang, [Kupang, 10°10′15″ S, 123°36′25″ E], {Coepang}, s.d., *Cunningham* 142 (K); **Timor** (loc. not specified) – {without loc.}, s.d., *Leschenault* s.n. (Posthumus 1944: 57).

Abacopteris aspera (C.Presl) Ching, Acta Phytotax. Sin. 8(4): 332 (1963).
Pronephrium asperum (C.Presl) Holttum, Blumea 20: 112 (1972); Holttum in Fl. Males., Ser. 2, 1(5): 512 (1981).
Ecology: Primary evergreen closed forest, on clayey soil over limestone, from 400 to 1450 m.
Distribution: S China, Thailand, Vietnam, Malesia, New Guinea, Solomon Islands and Australia.
Distribution in Timor: Timor-Leste – Lautém.
Specimens: Timor-Leste – Lautém, Mount Paitxau Range, near Malahara, [8°28′33″ S, 127°10′31″ E], 1 March 2006, *Cowie* 11029 (DNA0177827, n.v.; L3585767)

Pseudocyclosorus tylodes (Kunze) Ching, Acta Phytotax. Sin. 8(4): 323 (1963); Holttum in Fl. Males., Ser. 2, 1(5): 413 (1981).
Dryopteris crassinervia C.Chr. ex Rensch, Hedwigia 74: 229 (1934); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 54 (1944).
Ecology: At c. 2500 m.
Distribution: S India, Sri Lanka, Himalayas, S and SW China, Taiwan, Myanmar, N Thailand, Vietnam, Philippines and Timor.
Distribution in Timor: Timor-Leste – Ainaro.
Specimens: Timor-Leste – Ainaro, [Mount Tata Mailau, 8°54′23″ S, 125°29′35″ E], {Ramelau}, 4 May 1932, *Stein* 1179 (B, fide posthumus, not found, type of *Dryopteris crassinervia* C.Chr. ex Rensch; BM, not found).

Sphaerostephanos acrostichoides (Desv.) Holttum in Fl. Males., Ser. 2, 1(5): 456 (1981).
Dryopteris riedleana (Gaudich.) Alderw., Malayan Ferns: 230 (1909); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 54 (1944). — *Polystichum riedleanum* Gaudich., Voy. Uranie [Freycinet] 327 (1828); Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 346 (1834).
Ecology: Not mentioned for Timor, but known from rocky stream-beds at 0 – 500 m, rarely up to 1500 m, elsewhere in Malesia.
Distribution: Philippines, Sulawesi, E Java, Lesser Sunda Islands (Sumba, Timor), Moluccas (Ambon), New Guinea and Bismarck Archipelago.
Distribution in Timor: not specified.
Notes: L herbarium holds two duplicates of Teysmann 10694 that belong to different taxa: *Sphaerostephanos acrostichoides* (Desv.) Holttum [L1257677] and *Strophocaulon unitum* (L.) S.E.Fawc. & A.R.Sm. [L.3603930]. The sheets have different barcodes but, ideally, should also be renumbered 10694 a and b, respectively.

Specimens: Timor (loc. not specified) – {without loc.}, s.d., *Teysmann* 10694 a (L1257677); s.d., *Anonymous* s.n. (L); s.d., *Spanoghe* s.n. (L1257679); s.d., *Leschenault* s.n. (P01604545); s.d., *Anonymous in Richard* s.n. (P01604544); s.d., *Anonymous in Desvaux* s.n. (P00709262; type of *Nephrodium acrostichoide*s Desv.); s.d., *Gaudichaud-Beaupré* 125 (G00348865; type of *Polystichum riedleanum* Gaudich.).

Sphaerostephanos heterocarpos (Blume) Holttum, Companion Handb. Ferns Brit. India: 209 (1974). — *Cyclosorus heterocarpos* (Blume) Ching, Bull. Fan Mem. Inst. Biol. Bot. 8: 180 (1938). — *Dryopteris heterocarpos* (Blume) Kuntze, Revis. Gen. Pl. 2: 813 (1891); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 41 (2002). — *Aspidium heterocarpon* Blume, Enum. Pl. Javae 2: 155 (1828).
Ecology: Mixed tropical monsoon forest, c. 600 m.
Distribution: S China, Vietnam, throughout Malesia to Polynesia.
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 21, 31 (BO, n.v.).

****Sphaerostephanos hirsutus*** var. ***celebicus*** Holttum in Fl. Males., Ser. 2, 1(5): 456 (1981).
Ecology: Terrestrial, on roadsides, riversides or next to spring waters, from 130 to 1578 m.
Distribution: Sulawesi and Lesser Sunda Islands (Flores and Timor).
Distribution in Timor: Timor-Leste – Aileu, Ainaro, Bobonaro.
Specimens: Timor-Leste – Aileu, roadside from Buklelu to Aileu, [8°38′42″ S, 125°31′32″ E], 1 April 2017, *Costa et al.* 236 (AVE, L); **Ainaro**, roadside of Maubisse, [8°49′42″ S, 125°35′54″ E], 8 April 2017, *Costa et al.* 252 (AVE, L); **Bobonaro**, Corluli, [8°55′42″ S, 125°10′39″ E], 16 September 2016, *Costa et al.* 180 (AVE, L.3959709).

Sphaerostephanos porphyricola (Copel.) Holttum, Kalikasan 4: 59 (1975); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 56 (2002).
Ecology: Montane habitats, c. 1600 m.
Distribution: Philippines, Borneo and Timor.
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 77 (BO, n.v.).

Sphaerostephanos solutus Holttum in Fl. Males., Ser. 2, 1(5): 459 (1981).
Aspidium hispidulum var. *solutum* Miq., Ann. Mus. Bot. Lugduno-Batavi 4: 160 (1868).
Aspidium hispidulum Decne., Nouv. Ann. Mus. 3: 346 (1834); Kuhn, Forschungsr.

Gazelle 4(Farne): 9 (1889).
Ecology: Not mentioned.
Distribution: Endemic to Timor (only known from the type).
Distribution in Timor: Not specified.
Specimens: **Timor** (loc. not specified) – {without loc.}, s.d., Zippelius/*Spanoghe* s.n. (L 0063440).
Obs: There is no agreement on whether this specimen was collected by Spanoghe (Holttum 1981: 459) or Zippelius (Miquel 1868: 160), because there are two contradictory labels in the specimen.

***Sphaerostephanos* sp.**
Specimens: **Timor-Leste** – **Ainaro**, Maubisse-Hato Builico, [8°52'53" S, 125°31'44" E], terrestrial fern, 10 February 2005, *Paiva, Silveira & Sousa* T 387 (AVE, COI00092280, L.3604456); **Díli**, Dare, [8°35'39" S, 125°34'00" E], 22 July 2016, *Costa et al.* 81 (AVE, L.3959708); **Ermera**, near ancient forest of Mahubo, after old Ermera, [8°44'03" S, 125°20'20" E], 19 February 2005, *Paiva, Silveira & Sousa* T 601 b (AVE).

Strophocaulon invisum (G.Forst.) S.E.Fawc. & A.R.Sm.
Sphaerostephanos invisus (G.Forst.) Holttum, Webbia 30(1): 195 (1976); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 55 (2002).
Ecology: In open or slightly shaded places in, mixed tropical monsoon forest, c. 500 m.
Distribution: Sulawesi, Timor, Moluccas, Papua New Guinea and Pacific Islands.
Distribution in Timor: West Timor – loc. not specified.
Specimens: **West Timor** – {without loc.}, s.d., *Ruma* 8, 10a, 10b (BO, n.v.).

Strophocaulon unitum (L.) S.E.Fawc. & A.R.Sm.
Sphaerostephanos unitus (L.) Holttum, J. S. African Bot. 40: 165 (1974); Holttum in Fl. Males., Ser. 2, 1(5): 477 (1981); Ruma, Fern[s] W. Timor E. Nusa Tenggara: 56 (2002).
Aspidium unitum (L.) Sw., J. Bot. (Schrader) 1800(2): 32 (1801); Decaisne, Nouv. Ann. Mus. Hist. Nat. 3: 346 (1834). — *Dryopteris unita* (L.) Kuntze, Revis. Gen. Pl. 2: 811 (1891); Posthumus, Ann. Bot. Gard. Buitenzorg, Vol. Hors Sér.: 57 (1944). — *Nephrodium unitum* (L.) R.Br., Prodr. Fl. Nov. Holland. 148 (1810); Carruthers in Forbes, Naturalist's Wanderings E. Archipel.: 523 (1885).
Dryopteris haenkeana (C.Presl.) Kuntze, Revis. Gen. Pl. 2: 812 (1891); Rensch, Hedwigia 74: 230 (1934).

Ecology: Terrestrial, on roadsides, under the shade of trees and in forests, mostly tropical monsoon forest, from c. 200 to 1200 m.
Distribution: Angola, E tropical Africa, Madagascar and other Indian Ocean islands, throughout India, Sri Lanka, SE Asia to Pacific islands and NE Australia.
Distribution in Timor: West Timor – Belu, Kupang; Timor-Leste – Baucau, Bobonaro, Lautém, Liquiça, Manufahi,Viqueque.
Specimens: West Timor – {without loc.}, s.d., *Ruma* 1a, 1b, 29a, 29b (BO, n.v.); **Belu**, [Atambua, 9°05′54″ S, 124°53′29″ E], {Dirum (Lamaknen)}, 21 July 1966, *Friedberg* 404 (LISC061392); **Kupang**, [Kupang, 10°10′44″ S, 123°43′47″ E], {Coepang}, April 1803, *Brown* s.n. (BM); **Timor-Leste – Baucau**, Waidede forest, [8°36′41″ S, 126°22′38″ E], 6 May 2017, *Costa et al.* 279 (AVE, L); **Bobonaro**, roadside from Balibo to Maliana, [8°57′23″ S, 125°04′39″ E], 16 September 2016, *Costa et al*. 174 (AVE, L.3959711); Oeleo roadside from Bobonaro to Lolotoe, [9°02′11″ S, 125°17′06″ E], 17 September 2016, *Costa et al*. 189 (AVE, L.3959710); **Lautém**, Malahara area, near Ira Sequiro, [8°24′03″ S, 127°10′54″ E], 27 October 2006, *Cowie* 11343 (DNA0185160, n.v.); **Liquiçá**, roadside between Tibar and Faiten, [8°36′59″ S, 125°29′09″ E], 23 June 2016, *Costa et al*. 6 (AVE, L.3959761); **Manufahi**, [Bubususu, 8°54′52″ S, 125°47′00″ E], {bibisoesoe}, 1883, *Forbes* 3581 (BM); **Viqueque**, near the base of Mount Laritame, [8°41′42″ S, 126°22′42″ E], 16 February 2005, *Paiva, Silveira & Sousa* T 564 (AVE, COI00092282, L.3603813); Dauboruba'a, [8°41′29″ S, 126°23′16″ E], 29 October 2016, *Costa et al*. 228 (AVE, L.3959760); **Timor** (loc. not specified) – {without loc.}, s.d., *Teysmann* 10694 b (L.3603930); s.d., *Spanoghe* s.n. (L3603923); s.d., *Anonymous* s.n. (L); s.d., *Teysmann* 10695 (L.3603925); s.d., *Zippellius* s.n. (L.3603927); s.d., *Guichenot* s.n. (P01605019); s.d., *Leschenault* s.n. (P01605018); s.d., *Anonymous in Richard* s.n. (P01605021).



Appendix II.
Some illustrative photographs of the Pteridophytes of Timor.



Figure II.1 - ***Asplenium nidus***, Dauboruba'a (Viqueque), October 29, 2016 (Costa et al. 223).



Figure II.2 - ***Asplenium tenerum,*** Manucoco (Atauro), August 8, 2016 (Costa et al. 121).



Figure II.3 - ***Athyrium cumingianum***, Dare, Vera Cruz (Díli), January 31, 2018 (Costa et al. 333).



Figure II.4 - ***Diplazium esculentum,*** Dare, Vera Cruz (Díli), July 22, 2016 (Costa et al. 82).



Figure II.5 - *Davallia denticulata*, Tibar (Liquiçá), June 23, 2016 (Costa et al. 7).



Figure II.6 - ***Davallia pentaphylla***, Manucoco (Atauro), August 10, 2016 (Costa et al. 140).



Figure II.7 - *Microlepia speluncae*, Dare, Vera Cruz (Díli), July 22, 2016 (Costa et al. 7).



Figure II.8 - ***Lastreopsis tenera***, Manucoco (Atauro), August 8, 2016 (Costa et al. 124).



Figure II.9 - ***Dryopteris cochleata***, Riheu - Bungara (Ermera), August 28, 2016 (Costa et al. 170).



Figure II.10 - ***Palhinhaea cernua***, Seloi kraik (Aileu), July 2, 2016 (Costa et al. 72).

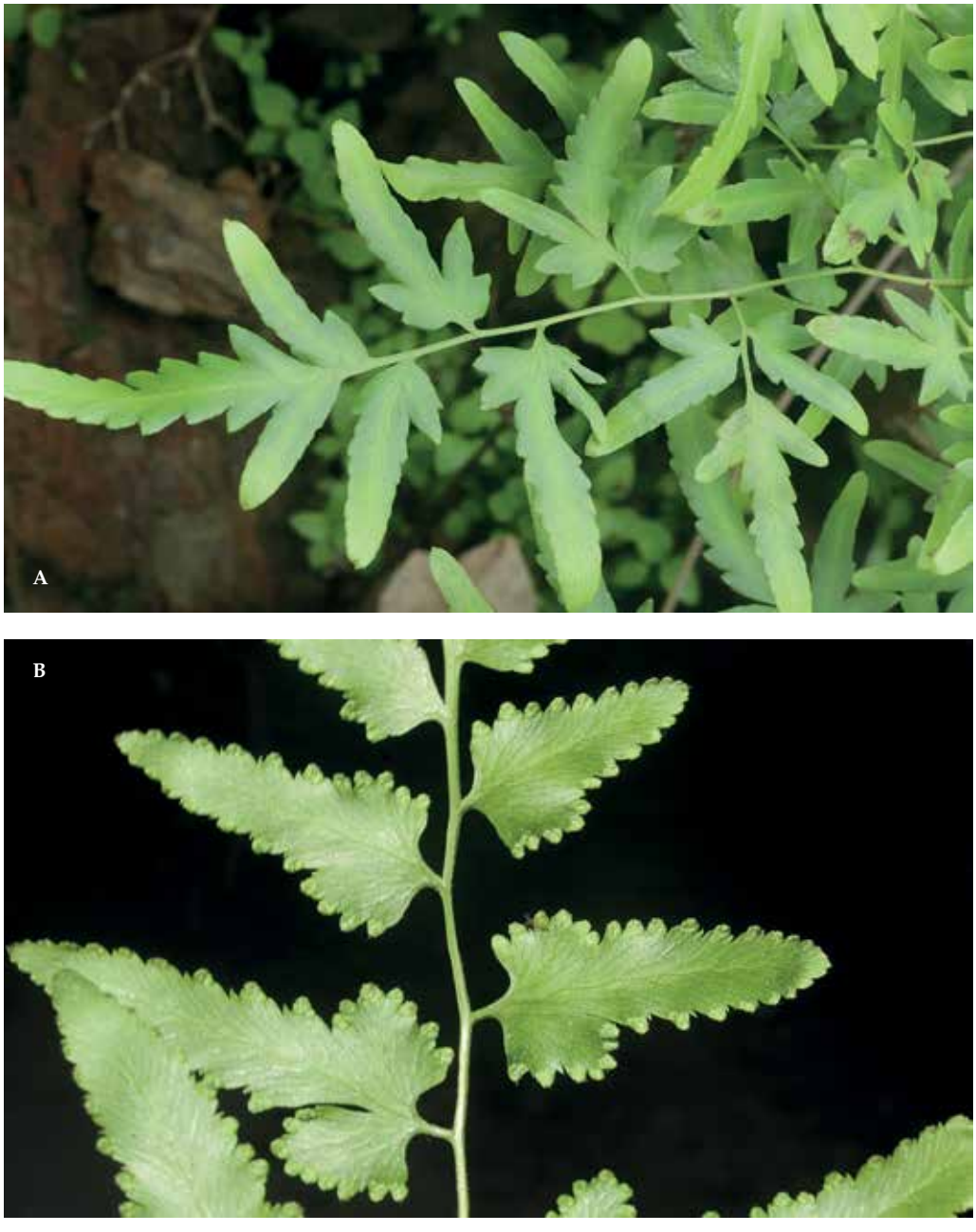


Figure II.11 - *Lygodium japonicum*, Dare, Vera Cruz (Díli), January 5, 2019 (Costa et al. 338). A. Sterile leaves; B. Fertile leaves.



Figure II.12 - ***Angiopteris evecta***, Asumau (Remexio), April 8, 2017 (Costa et al. 338). A. Habit; B. Detail of frond.



Figure II.**13** - ***Ophioglossum pendulum***, Manucoco (Atauro), August 8, 2016 (Costa et al. 132). A. Habit; B. Detail of fronds.



Figure II.14 - ***Drynaria quercifolia***, Dare, Vera Cruz (Díli), July 22, 2016 (Costa et al. 87). A. Habit; B. Detail of frond.



Figure II.15 - *Lepisorus mucronatus*, Turiscai (Manufahi), May 20, 2017 (Costa et al. 322).



Figure II.16 - ***Lepisorus spicatus,*** Maubisse (Ainaro), April 8, 2017 (Costa et al. 257).



Figure II.17 - *Loxogramme avenia*, Ossú (Viqueque), October 29, 2016 (Costa et al. 215).



Figure II.18 - ***Platycerium bifurcatum*** subsp. ***willinckii***, Dare, Vera Cruz (Díli), July 22, 2016 (Costa et al. 84).



Figure II.19 - *Pyrrosia longifolia*, Beiseuc, Tilomar (Covalima), April 19, 2017 (Costa et al. 272).



Figure II.20 - ***Selliguea feei,*** Maubisse (Ainaro), April 7, 2017 (Costa et al. 257).



Figure II.21 - ***Adiantum philippense***, Dare, Vera Cruz (Díli), January 5, 2019 (Costa et al. 340). A. Habit; B. Detail of frond.



Figure II.22 - ***Tectaria dissecta***, Manucoco (Atauro), August 7, 2016 (Costa et al. 100). A. Habit; B. Detail of





frond.

Hermenegildo Ribeiro da Costa (1968–) obtained a Bachelor's degree in Biology Education from the National University of Timor-Leste and a Master's degree in Ecology, Environment and Territory from the University of Porto. As part of his PhD in Biology, specializing in Ecology, he studied the pteridophytes of Timor, with particular emphasis on Timor-Leste, at the University of Aveiro. He is a permanent professor at the National University of Timor Lorosa'e (UNTL), where he continues to teach, supervise students, and conduct research, mainly in the fields of vascular plant systematics and ecology, ethnobotany, and environmental education. He is the author or co-author of more than 10 articles published in scientific journals.

Stuart Lindsay (1965-) is a British-trained pteridologist whose career has centered on the fern flora of Southeast Asia. While associated with the Royal Botanic Garden Edinburgh, he co-authored, with David J. Middleton, *Ferns of Thailand, Laos and Cambodia*, a standard floristic reference for mainland Southeast Asian pteridophytes that remains widely cited, including as a source of ecological and distributional data for regional fern checklists.
He was Senior Researcher at Gardens by the Bay until 2017, and subsequently Senior Manager at the Native Plant Centre of Singapore's National Parks Board. In parallel, he has been a long-standing contributor to the Flora of Singapore project, co-authoring its fern treatments and checklist. His taxonomic research has also focused on the systematics of vittarioid ferns (Pteridaceae: Vittarioideae) in East Asia, clarifying the identity of several poorly known species through morphological and molecular study.
Lindsay was also a co-author of the large collaborative 2020 *Nature* paper establishing New Guinea as the world's richest island flora. Across some seventy publications, his work combines regional floristics, fern systematics, and nomenclature, with lasting influence on the study of Southeast Asian pteridophyte diversity.

Helena Silva (1964-) obtained a PhD in Biology from the University of Aveiro, with a research focus on the ecology of coastal ecosystems. She began her academic career at the same university in 1987, where she is currently a Professor of Botany in the Department of Biology. She is the co-author of more than 50 scientific articles and books and was the coordinator of the project *Contribution to the Management of the Floristic Resources of Timor-Leste* (POCTI/MGS/46905/2002), funded by Portuguese Foundation for Science and Technology and the Orient Foundation.

Peter Hans Hovenkamp (1953–2019) was a Dutch pteridologist at the Rijksherbarium/Naturalis Biodiversity Center (Leiden), where he spent his entire scientific career studying ferns. He obtained his PhD in 1986 with a monograph of the fern genus *Pyrrosia* (Polypodiaceae), which remained a foundational taxonomic reference for the group, published in Flora Malesiana. He went on to become a principal contributor to the fern treatments of the same Flora Malesiana (Nephrolepidaceae, Oleandraceae, Polypodiaceae, Tectariaceae) and to Flora of China, authoring or co-authoring numerous genus- and family-level revisions. At the time of his death he was working on a revision of *Diplazium*.

Beyond taxonomy, Hovenkamp developed his own method in historical biogeography, based on time sequences of shared boundaries between allopatric sister clades rather than subjective areas of endemism (Cladistics, 1997, 2001), and he was a co-author of the influential Pteridophyte Phylogeny Group I (PPG I, 2016) classification of extant lycophytes and ferns. He served as Editor-in-Chief of Blumea from 2008 until his death and as Associate Editor of Cladistics (2002–2004).

Peter Hovenkamp died on 12 July 2019 in a flash flood in the Deer Cave of Gunung Mulu National Park, Sarawak, shortly after attending the 11th Flora Malesiana Symposium in Brunei Darussalam.

Paulo Silveira (1969-) obtained a degree in biology by the University of Aveiro, and MSci in Biotechnology by the Superior Technical Institute of Lisbon. For the PhD in Biology, specialty in Ecology he studied the flora of the Serra do Açor mountain in the University of Coimbra, shortly after which he was hired as an invited professor at University of Aveiro were he remains teaching, supervising students and conducting research mostly in vascular plants systematics and ecology. He co-authored the revision of the genus *Calendula* L. (Asteraceae) for *Flora Iberica*, for which he was also an assessor, and more than 50 papers in scientific journals. For some of these achievements, he has conducted field work not only in Portugal, but also Spain, several African countries (e.g. Morocco and Mozambique) and Timor-Leste.





