

## PHILIPPINE BIDDING DOCUMENTS

Offset Printing and Delivery of the Publication Field Guide to the Flowering Plants in Mount Apo Natural Park and Transforming Plant Blindness to Plant Awareness

(PhilGEPS No. 10343118)

Government of the Republic of the Philippines

Sixth Edition July 2020

#### **Preface**

These Philippine Bidding Documents (PBDs) for the procurement of Goods through Competitive Bidding have been prepared by the Government of the Philippines for use by any branch, constitutional commission or office, agency, department, bureau, office, or instrumentality of the Government of the Philippines, National Government Agencies, including Government-Owned and/or Controlled Corporations, Government Financing Institutions, State Universities and Colleges, and Local Government Unit. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract or Framework Agreement, as the case may be; (ii) the eligibility requirements of Bidders; (iii) the expected contract or Framework Agreement duration, the estimated quantity in the case of procurement of goods, delivery schedule and/or time frame; and (iv) the obligations, duties, and/or functions of the winning bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Goods to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

- a. All the documents listed in the Table of Contents are normally required for the procurement of Goods. However, they should be adapted as necessary to the circumstances of the particular Procurement Project.
- b. Specific details, such as the "name of the Procuring Entity" and "address for bid submission," should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.
- c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, Bid Data Sheet, General Conditions of Contract, Special Conditions of Contract, Schedule of Requirements, and Specifications are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

- d. The cover should be modified as required to identify the Bidding Documents as to the Procurement Project, Project Identification Number, and Procuring Entity, in addition to the date of issue.
- e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.
- f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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## Glossary of Acronyms, Terms, and Abbreviations

**ABC** – Approved Budget for the Contract.

**BAC** – Bids and Awards Committee.

**Bid** – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender*. (2016 revised IRR, Section 5[c])

**Bidder** – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

**Bidding Documents** – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

**BIR** – Bureau of Internal Revenue.

**BSP** – Bangko Sentral ng Pilipinas.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

**CDA** - Cooperative Development Authority.

**Contract** – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

**CIF** – Cost Insurance and Freight.

**CIP** – Carriage and Insurance Paid.

**CPI** – Consumer Price Index.

**DDP** – Refers to the quoted price of the Goods, which means "delivered duty paid."

**DTI** – Department of Trade and Industry.

**EXW** – Ex works.

FCA – "Free Carrier" shipping point.

**FOB** – "Free on Board" shipping point.

**Foreign-funded Procurement or Foreign-Assisted Project**— Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

Framework Agreement – Refers to a written agreement between a procuring entity and a supplier or service provider that identifies the terms and conditions, under which specific purchases, otherwise known as "Call-Offs," are made for the duration of the agreement. It is in the nature of an option contract between the procuring entity and the bidder(s) granting the procuring entity the option to either place an order for any of the goods or services identified in the Framework Agreement List or not buy at all, within a minimum period of one (1) year to a maximum period of three (3) years. (GPPB Resolution No. 27-2019)

**GFI** – Government Financial Institution.

**GOCC** – Government-owned and/or –controlled corporation.

**Goods** – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term "related" or "analogous services" shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

**GOP** – Government of the Philippines.

**GPPB** – Government Procurement Policy Board.

**INCOTERMS** – International Commercial Terms.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs - Local Government Units.

**NFCC** – Net Financial Contracting Capacity.

**NGA** – National Government Agency.

**NMP** – National Museum of the Philippines

**PhilGEPS** - Philippine Government Electronic Procurement System.

**Procurement Project** – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

**PSA** – Philippine Statistics Authority.

**SEC** – Securities and Exchange Commission.

**SLCC** – Single Largest Completed Contract.

**Supplier** – refers to a citizen, or any corporate body or commercial company duly organized and registered under the laws where it is established, habitually established in business and engaged in the manufacture or sale of the merchandise or performance of the general services covered by his bid. (Item 3.8 of GPPB Resolution No. 13-2019, dated 23 May 2019). Supplier as used in these Bidding Documents may likewise refer to a distributor, manufacturer, contractor, or consultant.

**UN** – United Nations.

#### Section I. Invitation to Bid

#### Notes on the Invitation to Bid

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

- The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;
- b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;
- c. The deadline for the submission and receipt of bids; and
- d. Any important bid evaluation criteria (*e.g.*, the application of a margin of preference in bid evaluation).

The IB should be incorporated in the Bidding Documents. The information contained in the IB must conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.



# Invitation to Bid for Offset Printing and Delivery of the Publication Field Guide to the Flowering Plants in Mount Apo Natural Park and Transforming Plant Blindness to Plant Awareness

1. The *National Museum of the Philippines*, through the *General Fund for F.Y. 2023* intends to apply the sum and project indicated below, being the ABC to payment under the contract for each lot:

Lot #	Procurement Project	Approved Budget for the Contract (PhP)
1	Offset Printing and Delivery of the Publication Field Guide to the Flowering Plants in Mount Apo Natural Park	PHP 400,000.00
2	Transforming Plant Blindness to Plant Awareness	PHP 97,500.00
	Total:	PHP 497,500.00

with identification number *NMPBAC-PB-2023-11-06*. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. **The National Museum of the Philippines** now invites bids for the above Procurement Project. Delivery of the Goods is required in:

Lot #	Contract Duration
1	Thirty (30) Calendar days
2	Thirty (30) Calendar days

Bidders should have completed, within *five (5) years* from the date of submission and receipt of bids, a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

3. Bidding will be conducted through open competitive bidding procedures using a non-discretionary "pass/fail" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

"Bidding is restricted to Filipino citizens/sole proprietorships, partnerships, or organizations with at least sixty percent (60%) interest or outstanding capital stock belonging to citizens of the Philippines, and to citizens or organizations of a country the laws or regulations of which grant similar rights or privileges to Filipino citizens, pursuant to RA No. 5183."

- 4. Prospective Bidders may obtain further information from *National Museum of the Philippines* and inspect the Bidding Documents at the address given below during *Mondays to Fridays, from 9:30 a.m. to 3:30 p.m.*
- 5. A complete set of Bidding Documents may be acquired by interested Bidders on **November 22, 2023,** from the given address and website(s) below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of:

Lot	Amount in (PHP)
1	PHP 500.00
2	PHP 500.00

The Procuring Entity shall allow the bidder to present its proof of payment for the fees *in person*.

- 6. The *National Museum of the Philippines* will hold a Pre-Bid Conference on *December* 1, 2023, at 10:30 AM at 2<sup>nd</sup> Floor BAC Room North Annex (Motorpool) Building which shall be open to prospective bidders.
- 7. Bids must be duly received by the BAC Secretariat through manual submission at the office address indicated below, **late bids shall not be accepted.**
- 8. All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 14.
- 9. Bid opening shall be on *December 15, 2023, at 10:30 AM* at the given address below. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

#### 10. Schedule of Activities

Date	Schedule of Activities
November 22, 2023	Posting / Advertisement
December 1, 2023	Pre-Bidding Conference
December 4, 2023	Deadline for submission of bidder's written queries
December 7, 2023	Issuance of Bid / Supplemental Bulletin/s, if any
December 15, 2023	Submission & Opening of Bids
December 18-19, 2023	Bid Evaluation
December 20-22, 2023	Post Qualification Evaluation
December 26, 2023	Issuance of Notice of Award

11. The *National Museum of the Philippines* reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised IRR of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

#### 12. For further information, please refer to:

Mr. Edwin J. Dela Rosa Head, BAC Secretariat 2<sup>nd</sup> Floor, BAC Room, North Annex of the National Museum of Fine Arts Building (Motorpool) Padre Burgos Street, Manila 1000

Website: www.nationalmuseum.gov.ph

Tel. No. 8298-1100 Local: 1014

Email Address: nationalmuseumbac@yahoo.com bac@nationalmuseum.gov.ph

(SGD)
ATTY. MA. ROSENNE M. FLORES-AVILA
Chairperson, Bids and Awards Committee

## Section II. Instructions to Bidders

#### **Notes on the Instructions to Bidders**

This Section on the Instruction to Bidders (ITB) provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Procuring Entity. It also provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and on the award of contract.

#### 1. Scope of Bid

The Procuring Entity, *National Museum of the Philippines* wishes to receive Bids for the *Offset Printing and Delivery of the Publication Field Guide to the Flowering Plants in Mount Apo Natural Park and Transforming Plant Blindness to Plant Awareness*, with identification number *NMPBAC-PB-2023-11-06*.

The Procurement Project (referred to herein as "Project") is composed of *Two* (2) Lots, the details of which are described in Section VII (Technical Specifications).

#### 2. Funding Information

2.1. The GOP through the source of funding as indicated below for **General Fund FY 2023** in the given amount below:

Lot #	Procurement Project	Approved Budget for the Contract (PHP)
1	Offset Printing and Delivery of the Publication Field Guide to the Flowering Plants in Mount Apo Natural Park	PHP 400,000.00
2	Transforming Plant Blindness to Plant Awareness	PHP 97,500.00

2.2. The source of funding is: NGA, the General Appropriations Act or Special Appropriations.

#### 3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manuals and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or **IB** by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have verified and accepted the general requirements of this Project, including other factors that may affect the cost, duration, and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

#### 4. Corrupt, Fraudulent, Collusive, and Coercive Practices

The Procuring Entity, as well as the Bidders and Suppliers, shall observe the highest standard of ethics during the procurement and execution of the contract. They or

through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

#### 5. Eligible Bidders

- 5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.
- 5.2. Foreign ownership exceeding those allowed under the rules may participate pursuant to:
  - When a Treaty or International or Executive Agreement as provided in Section 4 of the RA No. 9184 and its 2016 revised IRR allow foreign bidders to participate;
  - Citizens, corporations, or associations of a country, included in the list issued by the GPPB, the laws or regulations of which grant reciprocal rights or privileges to citizens, corporations, or associations of the Philippines;
  - iii. When the Goods sought to be procured are not available from local suppliers; or
  - iv. When there is a need to prevent situations that defeat competition or restrain trade.
- 5.3. Pursuant to Section 23.4.1.3 of the 2016 revised IRR of RA No.9184, the Bidder shall have an SLCC that is at least one (1) contract similar to the Project the value of which, adjusted to current prices using the PSA's CPI, must be at least equivalent to:

For the procurement of Non-expendable Supplies and Services: The Bidder must have completed a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.1 of the 2016 IRR of RA No. 9184.

#### 6. Origin of Goods

There is no restriction on the origin of goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN, subject to Domestic Preference requirements under **ITB** Clause 18.

#### 7. Subcontracts

7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than twenty percent (20%) of the Project.

The Procuring Entity has prescribed that: **Subcontracting is not allowed.** 

#### 8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address as indicated in paragraph 6 of the **IB**.

#### 9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

#### 10. Documents Comprising the Bid: Eligibility and Technical Components

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.
- 10.2. The Bidder's SLCC as indicated in **ITB** Clause 5.3 should have been completed within *Five (5) years* prior to the deadline for the submission and receipt of bids.
- 10.3. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. Similar to the required authentication above, for Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

#### 11. Documents Comprising the Bid: Financial Component

- 11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.
- 11.2. If the Bidder claims preference as a Domestic Bidder or Domestic Entity, a certification issued by DTI shall be provided by the Bidder in accordance with Section 43.1.3 of the 2016 revised IRR of RA No. 9184.

11.3. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.

#### 12. Bid Prices

- 12.1. Prices indicated on the Price Schedule shall be entered separately in the following manner:
  - a. For Goods offered from within the Procuring Entity's country:
    - i. The price of the Goods quoted EXW (ex-works, ex-factory, exwarehouse, ex-showroom, or off-the-shelf, as applicable);
    - ii. The cost of all customs duties and sales and other taxes already paid or payable;
    - iii. The cost of transportation, insurance, and other costs incidental to delivery of the Goods to their final destination; and
    - iv. The price of other (incidental) services, if any, listed in the **BDS**.

#### 13. Bid and Payment Currencies

- 13.1. For Goods that the Bidder will supply from outside the Philippines, the bid prices may be quoted in the local currency or tradable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies, shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.
- 13.2. Payment of the contract price shall be made in: Philippine Pesos.

#### 14. Bid Security

- 14.1. The Bidder shall submit a Bid Securing Declaration<sup>1</sup> or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.
- 14.2. The Bid and bid security shall be valid until *One Hundred Twenty (120) Calendar Days*. Any Bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

#### 15. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

#### 16. Deadline for Submission of Bids

16.1. The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the IB.

#### 17. Opening and Preliminary Examination of Bids

- 17.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.
  - In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.
- 17.2. The preliminary examination of bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

#### 18. Domestic Preference

18.1. The Procuring Entity will grant a margin of preference for the purpose of comparison of Bids in accordance with Section 43.1.2 of the 2016 revised IRR of RA No. 9184.

#### 19. Detailed Evaluation and Comparison of Bids

- 19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "passed," using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of the 2016 revised IRR of RA No. 9184.
- 19.2. If the Project allows partial bids, bidders may submit a proposal on any of the lots or items, and evaluation will be undertaken on a per lot or item basis, as the case maybe. In this case, the Bid Security as required by **ITB** Clause 14 shall be submitted for each lot or item separately.
- 19.3. The descriptions of the lots or items shall be indicated in **Section VII (Technical Specifications)**, although the ABCs of these lots or items are indicated in the **BDS** for purposes of the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184. The NFCC must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder.

- 19.4. The Project shall be awarded as follows: One Project having several items grouped into several lots, which shall be awarded as separate contracts per lot.
- 19.5. Except for bidders submitting a committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation, all Bids must include the NFCC computation pursuant to Section 23.4.1.4 of the 2016 revised IRR of RA No. 9184, which must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder. For bidders submitting the committed Line of Credit, it must be at least equal to ten percent (10%) of the ABCs for all the lots or items participated in by the prospective Bidder.

#### 20. Post-Qualification

20.2. Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, or in the case of multi-year Framework Agreement, that it is one of the eligible bidders who have submitted bids that are found to be technically and financially compliant,}the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS) and other appropriate licenses and permits required by law and stated in the **BDS**.

#### 21. Signing of the Contract

21.1. The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

#### Section III. Bid Data Sheet

#### **Notes on the Bid Data Sheet**

The Bid Data Sheet (BDS) consists of provisions that supplement, amend, or specify in detail, information, or requirements included in the ITB found in Section II, which are specific to each procurement.

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in the ITB and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS information and requirements specific to the circumstances of the Procuring Entity, the processing of the procurement, and the bid evaluation criteria that will apply to the Bids. In preparing the BDS, the following aspects should be checked:

- a. Information that specifies and complements provisions of the ITB must be incorporated.
- b. Amendments and/or supplements, if any, to provisions of the ITB as necessitated by the circumstances of the specific procurement, must also be incorporated.

## **Bid Data Sheet**

ITB					
Clause 5.3	For this pu	urpose, contracts similar to the Project shall be:			
	a. <i>Pri</i> or o b. Co	<ul> <li>a. Printing and publication of field guides, posters, bookmarks, postcards or any other similar publications</li> <li>b. Completed within five (5) years prior to the deadline for the submission and receipt of bids.</li> </ul>			
7.1	Subcontra	cting is not allow	ed.		
14.1	The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts:  a. The amount of not less than:				
		Lot #1	PHP 8,	000.00	
		Lot #2	PHP 1,	950.00	
		<ul><li>[two percent (2%) of ABC], if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or</li><li>b. The amount of not less than:</li></ul>			
		Lot #1	PHP 20	,000.00	
		Lot #2	PHP 4,	875.00	
	[fi	ve percent (5%) o	f ABC] if bid security is in	Surety Bond.	
19.3	19.3 The description of lot(s) or items are indicated below:			:	
	Lot no.	Procur	ement Project	Approved Budget for the Contract (ABC)	
	1	Publication Fi	and Delivery of the eld Guide to the s in Mount Apo Natural	PHP 400,000.00	
	2	Transforming Plant Blindness to Plant		PHP 97,500.00	

## Section IV. General Conditions of Contract

#### **Notes on the General Conditions of Contract**

The General Conditions of Contract (GCC) in this Section, read in conjunction with the Special Conditions of Contract in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

Matters governing performance of the Supplier, payments under the contract, or matters affecting the risks, rights, and obligations of the parties under the contract are included in the GCC and Special Conditions of Contract.

Any complementary information, which may be needed, shall be introduced only through the Special Conditions of Contract.

#### 1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

Additional requirements for the completion of this Contract shall be provided in the **Special Conditions of Contract (SCC).** 

#### 2. Advance Payment and Terms of Payment

- 2.1. Advance payment of the contract amount is provided under Annex "D" of the revised 2016 IRR of RA No. 9184.
- 2.2. The Procuring Entity is allowed to determine the terms of payment on the partial or staggered delivery of the Goods procured, provided such partial payment shall correspond to the value of the goods delivered and accepted in accordance with prevailing accounting and auditing rules and regulations. The terms of payment are indicated in the **SCC**.

#### 3. Performance Security

Within ten (10) calendar days from receipt of the Notice of Award by the Bidder from the Procuring Entity but in no case later than the signing of the Contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR of RA No. 9184.

The Procuring Entity or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Project specifications at no extra cost to the Procuring Entity in accordance with the Generic Procurement Manual. In addition to tests in the SCC, Section VII (Technical Specifications) shall specify what inspections and/or tests the Procuring Entity requires, and where they are to be conducted. The Procuring Entity shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.

All reasonable facilities and assistance for the inspection and testing of Goods, including access to drawings and production data, shall be provided by the Supplier to the authorized inspectors at no charge to the Procuring Entity.

#### 4. Warranty

- 5.1 In order to assure that manufacturing defects shall be corrected by the Supplier, a warranty shall be required from the Supplier as provided under Section 62.1 of the 2016 revised IRR of RA No. 9184.
- The Procuring Entity shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall, repair or replace the defective Goods or parts thereof without cost to the Procuring Entity, pursuant to the Generic Procurement Manual.

#### 5. Liability of the Supplier

The Supplier's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Supplier is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

## Section V. Special Conditions of Contract

#### **Notes on the Special Conditions of Contract**

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC found in Section IV.

The Special Conditions of Contract (SCC) complement the GCC, specifying contractual requirements linked to the special circumstances of the Procuring Entity, the Procuring Entity's country, the sector, and the Goods purchased. In preparing this Section, the following aspects should be checked:

- a. Information that complements provisions of the GCC must be incorporated.
- b. Amendments and/or supplements to provisions of the GCC as necessitated by the circumstances of the specific purchase, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of the GCC should be incorporated herein.

## **Special Conditions of Contract**

GCC Clause	_			
1.	Delivery and Documents –			
	other trade to meanings as the Internat Contract shaufful destination in Procuring En	s of the Contract, "EXW," "FOB," "FCA," "CIF, terms used to describe the obligations of the passigned to them by the current edition of INCOT ional Chamber of Commerce, Paris. The Deall be as follows:  Try terms applicable to this Contract are delivered indicated below. Risk and title will pass from thity upon receipt and final acceptance of the	arties shall have the FERMS published by livery terms of this ered to the place of the Supplier to the	
	destination.'	,		
	Lot	Procurement Project:	ABC	
	1	Offset Printing and Delivery of the Publication Field Guide to the Flowering Plants in Mount Apo Natural Park	PHP 400,000.00	
	2	Transforming Plant Blindness to Plant Awareness	PHP 97,500.00	
	Location: N	Metro Manila		
Delivery of the Goods shall be made by the Supplier in according terms specified in Section VI (Schedule of Requirements).  For purposes of this Clause, the Procuring Entity's Representation of the Project Site:				
	Lot #1	Catherine C. Enriquez – Museum Research	ner II - BNHD	
	Lot #2	Christine Joy S. Luna – Museum Researche	er II - BNHD	
	Incidental Se	ervices –		
The Supplier is required to provide all of the following service additional services, if any, specified in Section VI. Schedule of Req  a. performance or supervision of on-site assembly and/o the supplied Goods;  b. furnishing of tools required for assembly and/or mai the supplied Goods;			•	
			or maintenance of	
	c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;			

- d. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
- e. training of the Procuring Entity's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.
- f. For additional incidental service requirements indicated in the Annex "C" Terms of Reference.

The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

#### Packaging -

The Supplier shall provide such packaging of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in this Contract. The packaging shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packaging case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

The packaging, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified below, and in any subsequent instructions ordered by the Procuring Entity.

The outer packaging must be clearly marked on at least four (4) sides as follows:

Name of the Procuring Entity
Name of the Supplier
Contract Description
Final Destination
Gross weight
Any special lifting instructions
Any special handling instructions
Any relevant HAZCHEM classifications

A packaging list identifying the contents and quantities of the package is to be placed on an accessible point of the outer packaging if practical. If not practical the packaging list is to be placed inside the outer packaging but outside the secondary packaging.

#### Transportation -

Where the Supplier is required under Contract to deliver the Goods CIF, CIP, or DDP, transport of the Goods to the port of destination or such other named place of destination in the Philippines, as shall be specified in this Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.

Where the Supplier is required under this Contract to transport the Goods to a specified place of destination within the Philippines, defined as the Project Site, transport to such place of destination in the Philippines, including insurance and storage, as shall be specified in this Contract, shall be arranged by the Supplier, and related costs shall be included in the contract price.

Where the Supplier is required under Contract to deliver the Goods CIF, CIP or DDP, Goods are to be transported on carriers of Philippine registry. In the event that no carrier of Philippine registry is available, Goods may be shipped by a carrier which is not of Philippine registry provided that the Supplier obtains and presents to the Procuring Entity certification to this effect from the nearest Philippine consulate to the port of dispatch. In the event that carriers of Philippine registry are available but their schedule delays the Supplier in its performance of this Contract the period from when the Goods were first ready for shipment and the actual date of shipment the period of delay will be considered force majeure.

The Procuring Entity accepts no liability for the damage of Goods during transit other than those prescribed by INCOTERMS for DDP deliveries. In the case of Goods supplied from within the Philippines or supplied by domestic Suppliers risk and title will not be deemed to have passed to the Procuring Entity until their receipt and final acceptance at the final destination.

#### 2.2 The terms of payment:

Lots 1 and 2: 100% payment upon completion and final acceptance of deliveries.

#### 4 The inspections:

\*\*Note:

Kindly refer to the Terms of Reference ("Annex C") of the project for the Inspections of Goods

## Section VI. Schedule of Requirements

## Section VI. Schedule of Requirements

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

Lot	Description	Delivered, Weeks/Months
1	Offset Printing and Delivery of the Publication Field Guide to the Flowering Plants in Mount Apo Natural Park	30 Calendar days
2	Transforming Plant Blindness to Plant Awareness	30 Calendar days

<sup>\*</sup>Note: For full details of the above-mentioned project, kindly refer to the Terms of Reference (Annex C of the Bidding Documents)

## Section VII. Technical Specifications

#### **Notes for Preparing the Technical Specifications**

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying their Bids. In the context of Competitive Bidding, the specifications (e.g. production/delivery schedule, manpower requirements, and after-sales service/parts, descriptions of the lots or items) must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness, and economy in procurement be realized, responsiveness of bids be ensured, and the subsequent task of bid evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials unless otherwise provided in the Contract.

Samples of specifications from previous similar procurements are useful in this respect. The use of metric units is encouraged. Depending on the complexity of the goods and the repetitiveness of the type of procurement, it may be advantageous to standardize the General Technical Specifications and incorporate them in a separate subsection. The General Technical Specifications should cover all classes of workmanship, materials, and equipment commonly involved in manufacturing similar goods. Deletions or addenda should then adapt the General Technical Specifications to the particular procurement.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for equipment, materials, and workmanship, recognized Philippine and international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that equipment, materials, and workmanship that meet other authoritative standards, and which ensure at least a substantially equal quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the Special Conditions of Contract or the Technical Specifications.

#### Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest edition or revision of the relevant standards and codes shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Reference to brand name and catalogue number should be avoided as far as possible; where unavoidable they should always be followed by the words "or at least equivalent." References to brand names cannot be used when the funding source is the GOP.

Where appropriate, drawings, including site plans as required, may be furnished by the Procuring Entity with the Bidding Documents. Similarly, the Supplier may be requested to provide drawings or samples either with its Bid or for prior review by the Procuring Entity during contract execution.

Bidders are also required, as part of the technical specifications, to complete their statement of compliance demonstrating how the items comply with the specification.

In case of Renewal of Regular and Recurring Services, the Procuring Entity must indicate here the technical requirements for the service provider, which must include the set criteria in the conduct of its performance evaluation.

## **Technical Specifications of Lot 1**

ot		Specification	Statement of Compliance	
	Offset Printing and Delivery of the Publication Field Guide to the Flowering Plants in Mount Apo Natural Park			
	TECHNICAL SPE	CIFICATIONS:		
	Quantity	400 copies		
	Size	7x10 inches		
	No. of page	192 excluding cover pages, printed back-to-back		
	Stocks	Cover: 300 gsm Insider: 10 gsm Glossy or Satin (Semi-gloss) Acid free Uncoated		
	Colors	Cover: Full color Inside: Full color		
	Lamination	Matte Lamination		
	Binding	Smythe Sewn Perfect		
	Process	Offset		
	in accordance t Botany and Na Natural History Manila.	will be responsible for the production of the book of the specifications stated to be delivered to the tional Herbarium Division, National Museum of (NMNH), T.M. Kalaw Avenue, Rizal Park, Ermita, must have its printing equipment, office, and full-		
	by the NMP B Document Refe June 2023 Ve information of disclosure and a permission by the	must be able to comply with the requirements set sids and Awards Committee. PROJECT PROFILE erence No. NMP-BAC-F-020 Effectivity Date: 30 rsion no.: 2023-000 This document contains the National Museum of the Philippines. Any reproduction are prohibited except upon written the National Museum of the Philippines.  If the deliverables must be done to ensure that		
	publications me	eet the required quality. Rejected product/s must d replaced, free of charge.		

5. No materials printed for the NMP shall be used for any other purpose/s by any other party.	
6. The published materials should last at least 50 years.	
SUBMITTALS:	
1. The Supplier must be able to submit a minimum of three similar sample print jobs to the NMP.	
2. Digital printed layout and machine-printed color proofs (at least 2 sample/proof prints) of the specified publication materials must be submitted by the Supplier to the NMP for approval prior to printing of the required number of copies.	
3. 400 copies of the book in accordance to the specifications stated must be delivered to the Botany and National Herbarium Division, National Museum of Natural History (NMNH), T.M. Kalaw Avenue, Rizal Park, Ermita, Manila upon approval of the machine-printed color proofs. Rejected product/s upon inspection must be reprinted and replaced, free of charge.	
COMPLETION TIME:	
The Supplier must be able to provide, print, and deliver the specified publication materials within thirty (30) calendar days upon the approval of the digital printed layout and machineprinted color proofs submitted to NMP.	
TERMS OF PAYMENT:	
100% payment upon completion and final acceptance of deliveries	
WARRANTY:	
The Contractor shall provide One (1) year warranty reckoned from the date of completion and acceptance. Form of warranty shall be as specified in Section 62.1 of the IRR of R.A. 9184, the Government Procurement Reform Act and its Implementing Rules and Regulations.	
CONTRACTOR'S ELIGIBILITY:	
The Contractor is required to submit at least One (1) similar contract/s awarded and completed from Y2018 up to present with an amount of at least Fifty Percent (50%) of the Approved Budget for the Contract (ABC).	
LIQUIDATED DAMAGES:	
When the contractor fails to satisfactorily deliver goods under the contract within the specified delivery schedule, inclusive of duly	

granted time extensions, if any, the contractor shall be liable for damages for the delay and shall pay the procuring entity liquidated damages, not by way of penalty, an amount equal to 1/10 of 1% of the cost of the delayed contract scheduled for every day of delay until such goods are finally delivered and accepted by the procuring entity concerned. In no case shall the sum of the liquidated damages exceed 10% of the total contract price, in which the procuring entity concerned may rescind the contract and impose appropriate sanctions over and above the liquidated damages.	
PRE-TERMINATION CLAUSE:	
The contract is effective on the date indicated in the NTP and shall remain in full force for (DURATION) or until terminated by either party (NMP or Contractor) upon prior written notice by either party. Termination process shall follow the prescribed procedure under IRR-A R.A. 9184.	
The NMP reserves the right to pre-terminate the contract by serving written notice on the Contractor. If the Contractor does not appeal or seek reconsideration of the decision to pre-terminate within Fifteen (15) calendar days from receipt of the notice, the contract is deemed terminated. The grounds for the termination of the contract by the NMP include but not limited to the following:	
Violation(s) of any of the terms and conditions of the Contract;     and	
2. Any other act or omission by the Contractor which is detrimental or prejudicial to the interest of the NMP, its employee(s), or the public	

## **Technical Specifications of Lot 2**

Lot	Specification	Statement of Compliance
2	Transforming Plant Blindness to Plant Awareness	

#### **TECHNICAL SPECIFICATIONS:**

POSTERS				
Size	Qty.	GSM/Type and Quality of Paper/Color of Print		
A2	100	300 gsm/Matte laminated paper/colored		
А3	100	300 gsm/Matte laminated paper/colored		

POSTCARDS				
Size	Qty.	GSM/Type and Quality of Paper		
5.5"x4"	500	500 GSM/ Matte laminated and cream-		
		colored paper/ Colored		

BOOKMARKS				
Size	Qty.	GSM/Type and Quality of Paper/Printing		
		Method		
9"x2"	1000	500 GSM/Matte laminated paper/Laser		
		cutting		
(7" x 2" will be				
allotted for the				
printing of the main body of the				
bookmark while				
the 2" x 2" at the				
upper portion of				
the main body will be allotted for laser				
cutting)				

#### **RESPONSIBILITIES:**

- 1. The supplier will be responsible for the production of the CEPA materials in accordance with the specifications stated to be delivered to the Botany and National Herbarium Division, National Museum of Natural History (NMNH), T.M. Kalaw Avenue, Rizal Park, Ermita, Manila.
- 2. The Supplier must be able to prove that they have the necessary printing equipment, office, and full-time staff.
- 3. The Supplier must be able to comply with the requirements set by the NMP Bids and Awards Committee.
- 4. The Supplier must have at least five (5) years of experience in the industry to guarantee aftersales service.
- 5. The supplier must comply with the required inspection of the deliverables to ensure that the printed publications meet the required quality. Rejected product/s must be reprinted and replaced, free of charge.
- 6. The supplier must agree that no materials printed for the NMP shall be used for any other purpose/s by any other party.

7. The published materials should last at least 50 years.	
SUBMITTALS:	
1. The Supplier must be able to submit a minimum of three similar sample print jobs to the NMP.	
2. Digitally printed layout and machine-printed color proofs of the specified publication materials (at least 2 sample/proof prints for bookmark, postcard, and A2 and A3 poster) must be submitted by the Supplier to the NMP for approval prior to printing the required number of copies.	
3. 100 copies of poster, 500 copies of Postcards, and 1000 copies of bookmarks in accordance to the specifications stated above must be delivered to the Botany and National Herbarium Division, National Museum of Natural History (NMNH), T.M. Kalaw Avenue, Rizal Park, Ermita, Manila upon approval of the machine-printed color proofs. Rejected product/s upon inspection must be reprinted and replaced, free of charge.	
COMPLETION TIME:	
The Supplier must be able to provide, print, and deliver the specified publication materials within thirty (30) calendar days upon the approval of the digital printed layout and machineprinted color proofs submitted to NMP.	
TERMS OF PAYMENT:	
100% payment upon completion and final acceptance of deliveries	
WARRANTY:	
The Contractor shall provide One (1) year warranty reckoned from the date of completion and acceptance. Form of warranty shall be as specified in Section 62.1 of the IRR of R.A. 9184, the Government Procurement Reform Act and its Implementing Rules and Regulations.	
CONTRACTOR'S ELIGIBILITY:	
The Contractor is required to submit at least One (1) similar contract/s awarded and completed from Y2018 up to present with an amount of at least Fifty Percent (50%) of the Approved Budget for the Contract (ABC).	
LIQUIDATED DAMAGES:	
When the contractor fails to satisfactorily deliver goods under the contract within the specified delivery schedule, inclusive of duly	

granted time extensions, if any, the contractor shall be liable for damages for the delay and shall pay the procuring entity liquidated damages, not by way of penalty, an amount equal to 1/10 of 1% of the cost of the delayed contract scheduled for every day of delay until such goods are finally delivered and accepted by the procuring entity concerned. In no case shall the sum of the liquidated damages exceed 10% of the total contract price, in which the procuring entity concerned may rescind the contract and impose appropriate sanctions over and above the liquidated damages

#### PRE-TERMINATION CLAUSE:

The contract is effective on the date indicated in the NTP and shall remain in full force for (DURATION) or until terminated by either party (NMP or Contractor) upon prior written notice by either party. Termination process shall follow the prescribed procedure under IRR-A R.A. 9184.

The NMP reserves the right to pre-terminate the contract by serving written notice on the Contractor. If the Contractor does not appeal or seek reconsideration of the decision to pre-terminate within Fifteen (15) calendar days from receipt of the notice, the contract is deemed terminated. The grounds for the termination of the contract by the NMP include but not limited to the following:

- 1. Violation(s) of any of the terms and conditions of the Contract; and
- 2. Any other act or omission by the Contractor which is detrimental or prejudicial to the interest of the NMP, its employee(s), or the public

# Section VIII. Checklist of Technical and Financial Documents

#### Notes on the Checklist of Technical and Financial Documents

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

- a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or
- b. Any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary "pass/fail" criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

# **Checklist of Technical and Financial Documents**

#### I. TECHNICAL COMPONENT ENVELOPE

		Class "A" Documents
Leg	ial Doc	<u>ruments</u>
	(a)	Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;
<b>T</b>	- <b>/</b> :	Dogwayanta
		Documents
	(b)	Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; <b>and</b>
	(c)	Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No. 9184, within the relevant period as provided in the Bidding Documents; <u>and</u>
	(d)	Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission <u>or</u> Original copy of Notarized Bid Securing Declaration; <u>and</u>
	(e)	Conformity with the Technical Specifications, which may include production/delivery schedule, manpower requirements, and/or aftersales/parts, if applicable; <u>and</u>
	(f)	Original duly signed Omnibus Sworn Statement (OSS) <u>and</u> if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.
<u>Fin</u>	ancial	<u>Documents</u>
	(g)	The prospective bidder's computation of Net Financial Contracting Capacity (NFCC) or A Committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation.
		Class "B" Documents
	(h)	If applicable, a duly signed joint venture agreement (JVA) in case the joint venture is already in existence <u>or</u> duly notarized statements from all the potential joint venture partners stating that they will enter into and abide

by the provisions of the JVA in the instance that the bid is successful.

#### **II. FINANCIAL COMPONENT ENVELOPE**

(i)	Original of duly signed and accomplished Financial Bid Form; and
(j)	Original of duly signed and accomplished Price Schedule(s).

Note: Submit the following requirements in a separate envelope:

- E-Copy of all Eligibility, Technical, and Financial components save in any storage device;
- SEC Registration or DTI Certificate (Certified true Copy)
- Valid Mayor's / Business Permit (Certified true Copy)
- Tax Clearance Certificate (Certified true Copy)
- Latest Audited Financial Statement (Certified true Copy)
- Latest Income Tax Return (Certified true Copy)
- Bid Bulletin, if any, and;
- Photocopy of the *official receipt* of the Bidding Documents (Certified true copy).

# **ANNEX "A"**

**Packaging and Labeling Instructions** 

#### PACKAGING AND LABELLING INTRUCTIONS

#### 1. Two Envelope System

The ORIGINAL - TECHNICAL COMPONENTS requirements stated below shall be enclosed into a folder, same as with the ORIGINAL - FINANCIAL COMPONENTS requirements which will also be done in a separate folder. These two (2) folders shall be placed into separate envelope forming the Two Envelope System.

Envelope 1: Technical Components (see attached listing)

Envelope 2: Financial Components (see attached listing)

- 2. The First Envelope, ORIGINAL TECHNICAL COMPONENTS and the Second Envelope, ORIGINAL FINANCIAL COMPONENTS should be sealed in an outer envelope marked as ORIGINAL BID. Each copy of the first and second envelopes shall be similarly sealed duly marking the inner envelopes as "COPY NO. \_\_\_\_ TECHNICAL COMPONENT" and "COPY NO. \_\_\_\_ FINANCIAL COMPONENT" and the outer envelope as "COPY NO. \_\_\_\_ ", respectively. The First and Second envelope should be produced into three (3) copies marked as Copy No. 1, Copy No. 2 and Copy No. 3.
- 3. All four (4) envelopes, Original, Copy No. 1, Copy No. 2 and Copy No. 3, shall be enclosed in a single envelope referred to as the Mother Envelope.
- 4. All documents must be marked with Ear tabs. There must be a Table of Contents indicating all the documents to be submitted per folder.
- 5. All envelopes should properly be sealed, signed and labelled. The folders should be labelled properly.
- 6. All copies must be Certified True Copy and signed

TO: ATTY. MA. ROSENNE M. FLORES-AVILA

Chairperson

Bids and Awards Committee

National Museum of the Philippines Padre Burgos Avenue, ermita Manila

FROM: Name of Company

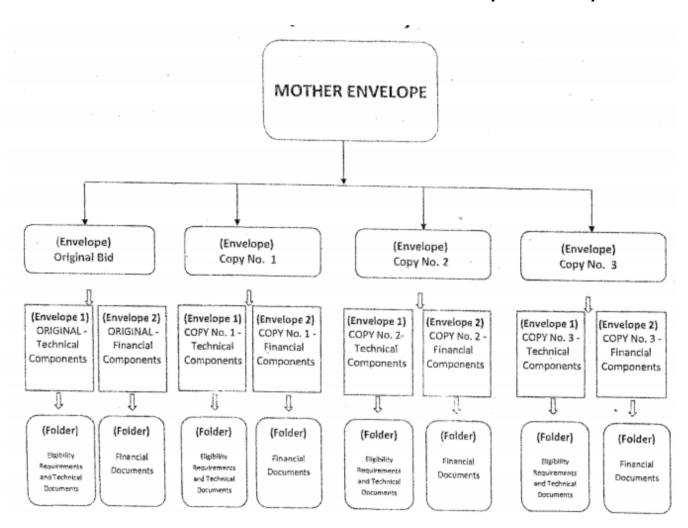
Address & Telephone Number

Reference No.

Project Title Location

Do not Open Before: date and time of the Submission and Opening of Bids

## PACKAGING AND LABELING INSTRUCTIONS (DIAGRAM)



# ANNEX "B"

# **Bidding Forms**

# Bid Form for the Procurement of Goods [shall be submitted with the Bid]

	[shall be submitted with the Bid]
	BID FORM
	Date :
	Project Identification No.:
To: [name and o	address of Procuring Entity]
Supplemental o acknowledged, Goods] in confor or the total calc other bid modifipart of this Bid. [specify the apple	examined the Philippine Bidding Documents (PBDs) including the r Bid Bulletin Numbers [insert numbers], the receipt of which is hereby duly we, the undersigned, offer to [supply/deliver/perform] [description of the rmity with the said PBDs for the sum of [total Bid amount in words and figures] culated bid price, as evaluated and corrected for computational errors, and ications in accordance with the Price Schedules attached herewith and made. The total bid price includes the cost of all taxes, such as, but not limited to: licable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and devies and duties], which are itemized herein or in the Price Schedules,
If our Bio	d is accepted, we undertake:
	o deliver the goods in accordance with the delivery schedule specified in the chedule of Requirements of the Philippine Bidding Documents (PBDs);
	o provide a performance security in the form, amounts, and within the times rescribed in the PBDs;
	o abide by the Bid Validity Period specified in the PBDs and it shall remain inding upon us at any time before the expiration of that period.
[Insert th	nis paragraph if Foreign-Assisted Project with the Development Partner:
	sions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, execution if we are awarded the contract, are listed below:
Name and addre	ess Amount and Purpose of
of agent Curren	cy Commission or gratuity

(if none, state "None") ]

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your Notice of Award, shall be binding upon us.

We understand that you are not bound to accept the Lowest Calculated Bid or any Bid you may receive.

We certify/confirm that we comply with the eligibility requirements pursuant to the PBDs.

The undersigned is authorized to submit the bid on behalf of [name of the bidder] as evidenced by the attached [state the written authority].

We acknowledge that failure to sign each and every page of this Bid Form, including the attached Schedule of Prices, shall be a ground for the rejection of our bid.

Name:
Legal capacity:
Signature:
Duly authorized to sign the Bid for and behalf of:
Date:

### Price Schedule for Goods Offered from Within the Philippines

# [shall be submitted with the Bid if bidder is offering goods from within the Philippines]

Name of Bidder Project ID No Pa						Page	of		
1	2	3	4	5	6	7	8	9	10
Item	Description	Country of origin	Quantity	Unit price EXW per item	Transportation and all other costs incidental to delivery, per item	Sales and other taxes payable if Contract is awarded, per item	Cost of Incidental Services, if applicable, per item	Total Price, per unit (col 5+6+7+8)	Total Price delivered Final Destination (col 9) x (col 4)
Nam	e:								
.egal	Capacity:								

#### **Omnibus Sworn Statement (Revised)**

#### [shall be submitted with the Bid]

#### **AFFIDAVIT**

- I, [Name of Affiant], of legal age, [Civil Status], [Nationality], and residing at [Address of Affiant], after having been duly sworn in accordance with law, do hereby depose and state that:
- 1. [Select one, delete the other:]

[If a sole proprietorship:] I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

[If a partnership, corporation, cooperative, or joint venture:] I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. [Select one, delete the other:]

[If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

[If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable;)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;

- 4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;
  - 5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

#### 6. [Select one, delete the rest:]

[If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a partnership or cooperative:] None of the officers and members of [Name of Bidder] is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of [Name of Bidder] is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

- 7. [Name of Bidder] complies with existing labor laws and standards; and
- 8. [Name of Bidder] is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:
  - a. Carefully examining all of the Bidding Documents;
  - b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
  - Making an estimate of the facilities available and needed for the contract to be bid, if any; and
  - d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the [Name of the Project].

- [Name of Bidder] did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.
- 10. In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.

IN	WITNESS	WHEREOF, I	have	hereunto	set	my	hand	this	 day	of	 20	at
		_, Philippines.										

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]

[Insert signatory's legal capacity]

Affiant

#### [Jurat]

# Bid Securing Declaration Form [shall be submitted with the Bid if bidder opts to provide this form of bid security]

REPUBLIC OF THE PHIL	LIPPINES)	
CITY OF	) S.S.	
	BID SECURING DECLAR	ATION

Project Identification No.: [Insert number]

To: [Insert name and address of the Procuring Entity] I/We, the undersigned, declare that:

- 1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.
- 2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f), of the IRR of RA No. 9184; without prejudice to other legal action the government may undertake.
- 3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:
  - a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
  - b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and
  - c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this \_\_\_\_ day of [month] [year] at [place of execution].

Affiant

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]

[Insert signatory's legal capacity]

#### [Jurat]

#### **Performance Securing Declaration (Revised)**

[if used as an alternative performance security but it is not required to be submitted with the Bid, as it shall be submitted within ten (10) days after receiving the Notice of Award]

REPUBLIC OF THE P	HILIPPINES)	
CITY OF	) S.S.	
	PERFORMANCE SECURING DE	CLARATION

Invitation to Bid: [Insert Reference Number indicated in the Bidding Documents]
To: [Insert name and address of the Procuring Entity]

- I/We, the undersigned, declare that:
  - 1. I/We understand that, according to your conditions, to guarantee the faithful performance by the supplier/distributor/manufacturer/contractor/consultant of its obligations under the Contract, I/we shall submit a Performance Securing Declaration within a maximum period of ten (10) calendar days from the receipt of the Notice of Award prior to the signing of the Contract.
  - 2. I/We accept that: I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of one (1) year for the first offense, or two (2) years <u>for the second offense</u>, upon receipt of your Blacklisting Order if I/We have violated my/our obligations under the Contract;
  - 3. I/We understand that this Performance Securing Declaration shall cease to be valid upon:
    - a. issuance by the Procuring Entity of the Certificate of Final Acceptance, subject to the following conditions:
      - i. Procuring Entity has no claims filed against the contract awardee;
      - ii. It has no claims for labor and materials filed against the contractor; and
      - iii. Other terms of the contract; or
    - b. replacement by the winning bidder of the submitted PSD with a performance security in any of the prescribed forms under Section 39.2 of the 2016 revised IRR of RA No. 9184 as required by the end-user.

**IN WITNESS WHEREOF,** I/We have hereunto set my/our hand/s this \_\_\_\_\_ day of [month] [year] at [place of execution].

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]

Affiant

#### [Jurat]

# Contract Agreement Form for the Procurement of Goods (Revised) [Not required to be submitted with the Bid, but it shall be submitted within ten (10) days after receiving the Notice of Award]

CONT	RACT AGREEMENT		
THIS AGREEMENT made the	day of	20	between [name of
PROCURING ENTITY] of the Philippines	(hereinafter called		$\underline{}$ ) of the one part and
[name of Supplier] of [city and country	of Supplier] (herein	after called	"the Supplier") of the
other part:			

WHEREAS, the Entity invited Bids for certain goods and ancillary services, particularly [brief description of goods and services] and has accepted a Bid by the Supplier for the supply of those goods and services in the sum of [contract price in words and figures in specified currency] (hereinafter called "the Contract Price").

#### NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

- 1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
- 2. The following documents as required by the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184 shall be deemed to form and be read and construed as integral part of this Agreement, *viz.*:
  - i. Philippine Bidding Documents (PBDs);
    - i. Schedule of Requirements;
    - ii. Technical Specifications;
    - iii. General and Special Conditions of Contract; and
    - iv. Supplemental or Bid Bulletins, if any
  - ii. Winning bidder's bid, including the Eligibility requirements, Technical and Financial Proposals, and all other documents or statements submitted; Bid form, including all the documents/statements contained in the Bidder's bidding envelopes, as annexes, and all other documents submitted (e.g., Bidder's response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity's bid evaluation;
  - iii. Performance Security;
  - iv. Notice of Award of Contract; and the Bidder's conforme thereto; and
  - v. Other contract documents that may be required by existing laws and/or the Procuring Entity concerned in the PBDs. Winning bidder agrees that additional contract documents or information prescribed by the GPPB that are subsequently required for submission after the contract execution, such as the Notice to Proceed, Variation Orders, and Warranty Security, shall likewise form part of the Contract.
- 3. In consideration for the sum of [total contract price in words and figures] or such other sums as may be ascertained, [Named of the bidder] agrees to [state the object of the contract] in accordance with his/her/its Bid.
- 4. The [Name of the procuring entity] agrees to pay the above-mentioned sum in accordance with the terms of the Bidding.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of the Republic of the Philippines on the day and year first above written.

[Insert Name and Signature] [Insert Name and Signature]

[Insert Signatory's Legal Capacity]

for: [Insert Signatory's Legal Capacity]

[Insert Procuring Entity] for:

[Insert Name of Supplier]

#### **Acknowledgment**

# ANNEX "C"

# **Terms of Reference**



PROJECT PROFILE				
Document Reference No.	NMP-BAC-F-020			
Effectivity Date:	30 June 2023			
Version no.:	2023-000			

**TITLE:** Offset Printing and Delivery of the Publication FIELD GUIDE TO THE FLOWERING PLANTS IN MOUNT APO NATURAL PARK

LOCATION: Botany and National Herbarium Division, National Museum of Natural History (NMNH), T.M. Kalaw Avenue, Rizal Park, Ermita, Manila.

IMPLEMENTING UNIT: Botany and National Herbarium Division

#### DESCRIPTION:

The project entitled "Biodiversity in Selected Mountain Ecosystems of Mindanao for Conservation and Sustainable Development" is a 3-year collaboration project between the National Museum of the Philippines (NMP) and the Central Mindanao University (CMU) funded by the Department of Science and Technology (DOST). It generally aims to conduct biodiversity assessment of the four mountain ranges - Mt. Apo, Mt. Hamiguitan, Mt. Pantaron, and Mt. Tago, situated in three regions in Mindanao and evaluate its physico-chemical components for conservation and sustainable development.

Throughout the course of the project, these mountain ranges have been visited where its existing flora and fauna were assessed, documented, and collected. The guide book *Flowering Plants in Mount Apo Natural Park* was among the several publications produced from the project. It provides actual plant images in the park and significant information on each of the species identified.

**OBJECTIVE:** The handbook "Flowering Plants of Mount Apo Natural Park" will serve as an additional reference material developed from the DOST-GIA funded project. This book is a significant addition to the growing knowledge of taxonomy of species in Mount Apo Natural Park and the Davao Region.

SCOPE OF WORK (for Infrastructure Projects)

TECHNICAL SPECIFICATIONS (for Goods/Services Projects)

TERMS OF REFERENCE (for Consulting Services Projects)

#### **Technical Specifications**

QUANTITY: 400 copies SIZE: 7x10 inches

NO. OF PAGE: 192 excluding cover pages, printed back to back

STOCKS (Cover): 300 GSM (Inside): 100 GSM

Glossy or Satin (Semi-gloss)

Acid free Uncoated

COLORS (Cover) : Full Color

(Inside): Full Color

LAMINATION : Matte Lamination BINDING : Smythe Sewn Perfect

PROCESS: Offset
PRICE: Php 1,000.00
LOT PRICE: Php 400,000.00

#### RESPONSIBILITIES:

- The supplier will be responsible for the production of the book in accordance to the specifications stated to be delivered to the Botany and National Herbarium Division, National Museum of Natural History (NMNH), T.M. Kalaw Avenue, Rizal Park, Ermita, Manila.
- The Supplier must have its printing equipment, office, and full-time staff.
- The Supplier must be able to comply with the requirements set by the NMP Bids and Awards Committee.



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Document Reference No.	NMP-BAC-F-020
Effectivity Date:	30 June 2023
Version no.:	2023-000

- Inspection of the deliverables must be done to ensure that publications meet the required quality. Rejected product/s must be reprinted and replaced, free of charge.
- 5. No materials printed for the NMP shall be used for any other purpose/s by any other party.
- 6. The published materials should last at least 50 years.

#### SUBMITTALS:

- 1. The Supplier must be able to submit a minimum of three similar sample print jobs to the NMP.
- Digital printed layout and machine-printed color proofs (at least 2 sample/proof prints) of the specified publication materials must be submitted by the Supplier to the NMP for approval prior to printing of the required number of copies.
- 400 copies of the book in accordance to the specifications stated must be delivered to the Botany and National Herbarium Division, National Museum of Natural History (NMNH), T.M. Kalaw Avenue, Rizal Park, Ermita, Manila upon approval of the machine-printed color proofs. Rejected product/s upon inspection must be reprinted and replaced, free of charge.

SOURCE OF FUND: Chargeable against General Fund for FY 2023 under Maintenance and other Operating Expenses (MOOE) Printing and Publication Expenses

**APPROVED BUDGET FOR CONTRACT:** The approved budget for the contract is Four Hundred Thousand pesos only (Php 400,000.00).

**COMPLETION TIME:** The Supplier must be able to provide, print, and deliver the specified publication materials within thirty (30) calendar days upon the approval of the digital printed layout and machine-printed color proofs submitted to NMP.

TERMS OF PAYMENT: 100% payment upon completion and final acceptance of deliveries.

**WARRANTY:** The Contractor shall provide **One (1) year** warranty reckoned from the date of completion and acceptance. Form of warranty shall be as specified in Section 62.1 of the IRR of R.A. 9184, the Government Procurement Reform Act and its Implementing Rules and Regulations.

CONTRACTOR'S ELIGIBILITY: The Contractor is required to submit at least One (1) similar contract/s awarded and completed from Y2018 up to present with an amount of at least Fifty Percent (50%) of the Approved Budget for the Contract (ABC).

#### LIQUIDATED DAMAGES:

When the contractor fails to satisfactorily deliver goods under the contract within the specified delivery schedule, inclusive of duly granted time extensions, if any, the contractor shall be liable for damages for the delay and shall pay the procuring entity liquidated damages, not by way of penalty, an amount equal to 1/10 of 1% of the cost of the delayed contract scheduled for every day of delay until such goods are finally delivered and accepted by the procuring entity concerned. In no case shall the sum of the liquidated damages exceed 10% of the total contract price, in which the procuring entity concerned may rescind the contract and impose appropriate sanctions over and above the liquidated damages.

#### PRE-TERMINATION CLAUSE:

The contract is effective on the date indicated in the NTP and shall remain in full force for (DURATION) or until terminated by either party (NMP or Contractor) upon prior written notice by either party. Termination process shall follow the prescribed procedure under IRR-A R.A. 9184.

The NMP reserves the right to pre-terminate the contract by serving written notice on the Contractor. If the Contractor does not appeal or seek reconsideration of the decision to pre-terminate within Fifteen (15) calendar days from receipt of the notice, the contract is deemed terminated. The grounds for the termination of the contract by the NMP include but not limited to the following:



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- Violation(s) of any of the terms and conditions of the Contract; and
   Any other act or omission by the Contractor which is detrimental or prejudicial to the interest of the NMP, its employee(s), or the public.



PROJECT PROFILE	
Document Reference No.	NMP-BAC-F-020
Effectivity Date:	30 June 2023
Version no.:	2023-000

TITLE: Transforming Plant Blindness to Plant Awareness

LOCATION: Botany and National herbarium Division, National Museum of Natural History (NMNH), T.M. Kalaw Avenue, Rizal Park, Ermita, Manila

IMPLEMENTING UNIT: Botany and National Herbarium Division

#### DESCRIPTION:

The project entitled "Transforming Plant Blindness to Plant Awareness" is an initiative of the Botany and National Herbarium Division to increase awareness of native and endemic flora found in different regions of the country. Moreover, this project aspires to support our talented local artists who are passionate and dedicated to promoting Philippine biodiversity.

This project will specifically feature the distinct characteristics of the Philippine Paphiopedilum (Orchidaceae), Vanda (Orchidaceae), and Rafflesia (Rafflesiaceae) with emphasis on their charismatic morphological features and geographic distribution. By doing so, Filipino local artists who are also passionate in their advocacy for the environment will receive the recognition and support that they deserve while achieving the main goal of the Botany and National Herbarium Division which is to make the public more engaged and inquisitive in learning about the natural and irreplaceable treasures of the Philippines. To extend the reach of this initiative, the said CEPA materials will be distributed in different institutions across the country which are accessible to or have the ability to reach a diverse range of audiences regardless of their gender and age as all individuals play equally important roles in building a community that deeply values environmental sustainability.

#### OBJECTIVE:

The National Museum of the Philippines, through the Botany and National Herbarium Division, seeks to raise awareness of Philippine Native Flora and contemporary environmental issues through the development and dissemination of Communication, Education, and Public Awareness (CEPA) materials in the form of posters, bookmarks, and postcards. Specifically, this project aims to do the following:

- Identify and present the diagnostic morphological features of Paphiopedilum, Vanda, and Rafflesia through illustrations and detailed description of each plant with emphasis on their characters that are easily recognizable to the public, allowing them to have in-depth appreciation and awareness of the native and threatened flora of the Philippines.
- Determine the current distribution of Philippine Paphiopedilum, Vanda, and Rafflesia and create
  an informative discussion about their conservation status and the recorded threats to their
  populations to give the people a broader perspective of the present status of our native flora
  and a deeper understanding of their critical role in maintaining a balanced and productive
  environment.
- Disseminate the developed Communication, Education, and Public Awareness materials to different areas of the country through coordination with regional branches of the National Museum of the Philippines, Schools and Universities, and other institutions that have the ability to accommodate or reach a wider range of audiences.
- ○SCOPE OF WORK (for Infrastructure Projects)
- TECHNICAL SPECIFICATIONS (for Goods/Services Projects)
- TERMS OF REFERENCE (for Consulting Services Projects)

I. POSTERS		
Size	Quantity (pcs.)	Grams per Square meter (GSM)/Type and
		Quality of Paper/ Color of Print
A2	100	300 GSM/ Matte laminated paper/ Colored
A3	100	300 GSM/ Matte laminated paper/ Colored

П	II. POSTCARDS		
П	Size (length x width in	Quantity (pcs.)	Grams per Square meter (GSM)/Type and
П	inches)		Quality of Paper



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5.5" x 4"	500	500 GSM/ Matte laminated and cream-colored
		paper/ Colored

III. BOOKMARKS		
Size (length x width in inches)	Quantity (pcs.)	Grams per Square meter (GSM) and Quality of Paper/ Printing method
9" x 2"  (7" x 2" will be allotted for the printing of the main body of the bookmark while the 2" x 2" at the upper portion of the main body will be allotted for laser cutting)	1000	500 GSM/ Matte laminated paper/ Laser cutting

#### RESPONSIBILITIES:

- The supplier will be responsible for the production of the CEPA materials in accordance with the specifications stated to be delivered to the Botany and National Herbarium Division, National Museum of Natural History (NMNH), T.M. Kalaw Avenue, Rizal Park, Ermita, Manila.
- The Supplier must be able to prove that they have the necessary printing equipment, office, and full-time staff.
- The Supplier must be able to comply with the requirements set by the NMP Bids and Awards Committee.
- The Supplier must have at least five (5) years of experience in the industry to guarantee aftersales service.
- The supplier must comply with the required inspection of the deliverables to ensure that the printed publications meet the required quality. Rejected product/s must be reprinted and replaced, free of charge.
- The supplier must agree that no materials printed for the NMP shall be used for any other purpose/s by any other party.
- 7. The published materials should last at least 50 years.

#### SUBMITTALS:

- 1. The Supplier must be able to submit a minimum of three similar sample print jobs to the NMP.
- Digitally printed layout and machine-printed color proofs of the specified publication materials (at least 2 sample/proof prints for bookmark, postcard, and A2 and A3 poster) must be submitted by the Supplier to the NMP for approval prior to printing the required number of copies.
- 100 copies of poster, 500 copies of Postcards, and 1000 copies of bookmarks in accordance
  to the specifications stated above must be delivered to the Botany and National Herbarium
  Division, National Museum of Natural History (NMNH), T.M. Kalaw Avenue, Rizal Park, Ermita,
  Manila upon approval of the machine-printed color proofs. Rejected product/s upon inspection
  must be reprinted and replaced, free of charge.

SOURCE OF FUND: Chargeable against General Fund for FY 2023 under Maintenance and other Operating Expenses (MOOE) Printing and Publication Expenses.

APPROVED BUDGET FOR CONTRACT: The approved budget for the contract is Ninety-Seven Thousand Five Hundred pesos only (Php 97, 500).

**COMPLETION TIME:** The Supplier must be able to provide, print, and deliver the specified publication materials within thirty (30) calendar days upon the approval of the digital printed layout and machine-printed color proofs submitted to NMP.

TERMS OF PAYMENT: 100% payment upon completion and final acceptance of deliveries.

**WARRANTY:** The Contractor shall provide **One (1) year** warranty reckoned from the date of completion and acceptance. Form of warranty shall be as specified in Section 62.1 of the IRR of R.A. 9184, the Government Procurement Reform Act and its Implementing Rules and Regulations.

CONTRACTOR'S ELIGIBILITY: The Contractor is required to submit at least One (1) similar contract/s awarded and completed from Y2018 up to present with an amount of at least Fifty Percent (50%) of the Approved Budget for the Contract (ABC).

#### LIQUIDATED DAMAGES:



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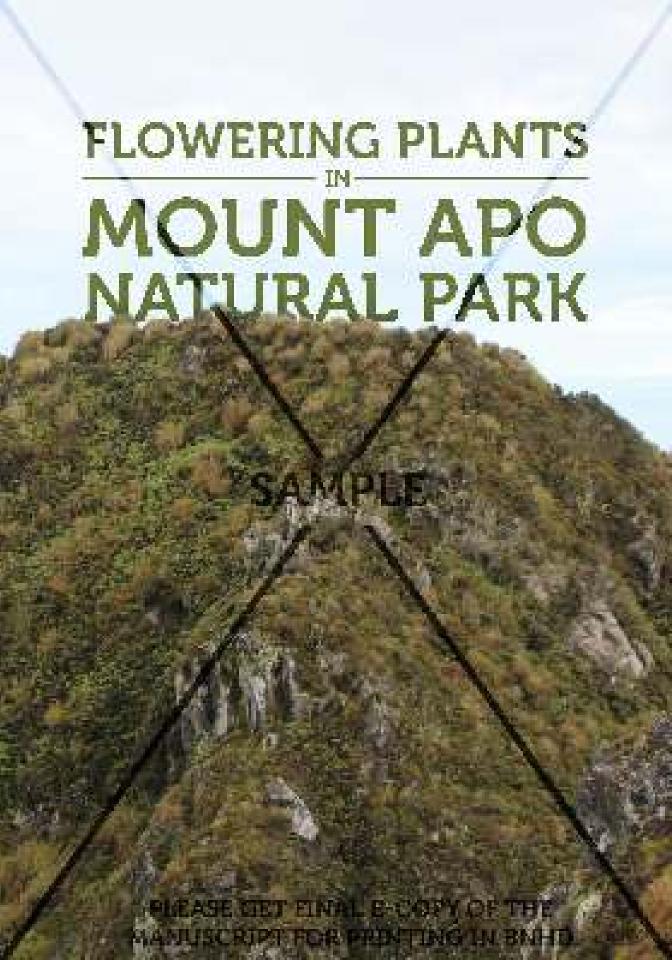
When the contractor fails to satisfactorily deliver goods under the contract within the specified delivery schedule, inclusive of duly granted time extensions, if any, the contractor shall be liable for damages for the delay and shall pay the procuring entity liquidated damages, not by way of penalty, an amount equal to 1/10 of 1% of the cost of the delayed contract scheduled for every day of delay until such goods are finally delivered and accepted by the procuring entity concerned. In no case shall the sum of the liquidated damages exceed 10% of the total contract price, in which the procuring entity concerned may rescind the contract and impose appropriate sanctions over and above the liquidated damages.

#### PRE-TERMINATION CLAUSE:

The contract is effective on the date indicated in the NTP and shall remain in full force for (**DURATION**) or until terminated by either party (NMP or Contractor) upon prior written notice by either party. Termination process shall follow the prescribed procedure under IRR-A R.A. 9184.

The NMP reserves the right to pre-terminate the contract by serving written notice on the Contractor. If the Contractor does not appeal or seek reconsideration of the decision to pre-terminate within Fifteen (15) calendar days from receipt of the notice, the contract is deemed terminated. The grounds for the termination of the contract by the NMP include but not limited to the following:

- 1. Violation(s) of any of the terms and conditions of the Contract; and
- Any other act or omission by the Contractor which is detrimental or prejudicial to the interest of the NMP, its employee(s), or the public.



Published in 2023 by the National Museum of the Philippines

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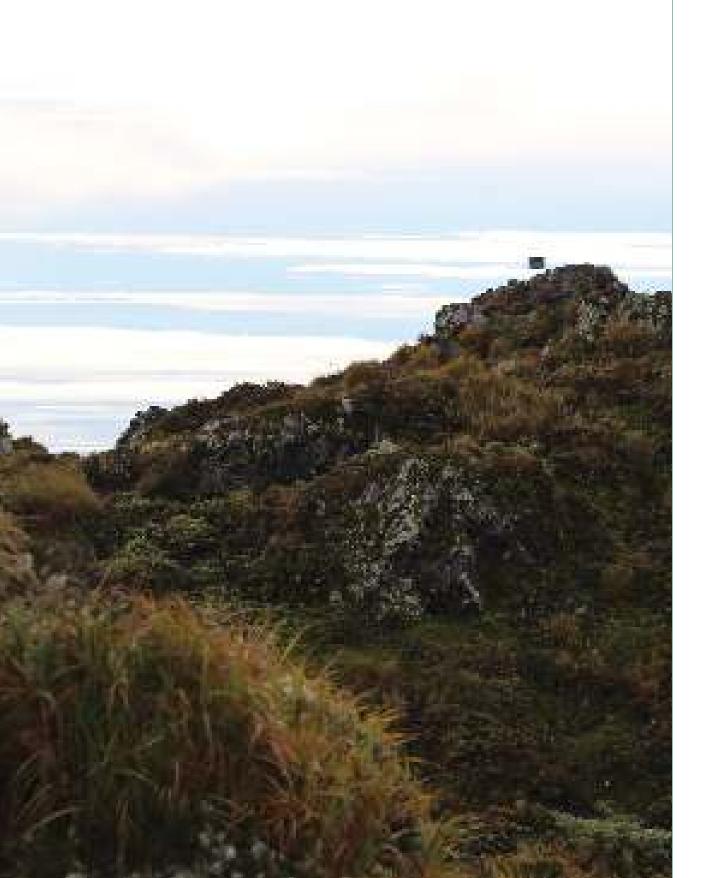
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Printed in the Philippines <Name of the Printing Press> ISBN No.: \_\_\_\_\_\_

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#### **FOREWORD**

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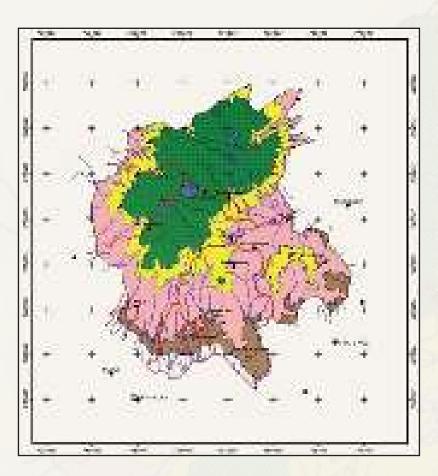
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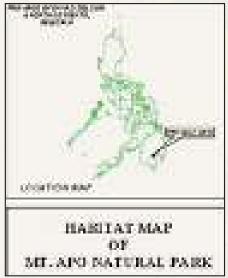


The Central Mindanao University (CMU) in collaboration with the National Museum of the Philippines (NMP), Davao Oriental State University (DOrSU), and University of the Philippines Los Baños – Museum of Natural History (UPLB-MNH) funded by the Department of Science and Technology (DOST) conducted a biodiversity research project entitled "Biodiversity in Selected Mountain Ecosystems of Mindanao for Conservation and Sustainable Development" from year 2018 – 2022.

The project documented the diversity of flora, fauna, and physico-chemical components of the habitat where the species were identified. This research project filled the gap in the existing biodiversity management frameworks of selected mountain ecosystems. It also served as an update on the current biodiversity, environmental plans, and socio-economic cultural data in the ecosystems. Four mountain ranges situated in the three regions in Mindanao were selected due to \_\_\_\_\_\_ including Mt. Tago and Pantaron Ranges in Bukidnon, Mt. Apo in Davao del Sur-North Cotabato and Mt. Hamiguitan in Davao Oriental.

This guide book *Flowering Plants in Mount Apo Natural Park* was among the several publications produced from the project. It provides actual plant images in the park and significant information on each of the species identified. This book is a significant addition to the growing knowledge of taxonomy of species in Mount Apo Natural Park and the Davao Region.







Located in the southern part of Mindanao, Mount Apo Natural Park (MANP) is known for its mountainous landscape covering 54,974.87 hectares declared as Protected Area under the Republic Act 9237. The park covers the volcanic massif formed by Mount Apo, a stratovolcano with the highest peak in the Philippines, reaching 2,954 meters above sea level. It is located between the provinces of Davao del Sur in Region 11 and North Cotabato in Region 12. Although Mount Apo appears to be dormant due to having no records of its eruption, there are still numerous vents below the peak, from which steam and sulphurous gases emerged.

The different forest types from dipterocarp forests to mossy forests, the rich floral and faunal diversity that is home to several endemic and threatened species especially for the critically endangered Philippine Eagle (*Pithecophaga jefferyi*), centuries-old rock formations, and massive boulders in the peak area are testaments to the rich geological, cultural, and biodiversity heritage of the park. MANP has thus earned recognition as an ASEAN Heritage Site and included in the UN List of National Parks and Equivalent Reserves.

There are different forest types in MANP such as the lowland dipterocarp forests, mossy forests, and the subalpine forest zones. Mt. Apo has been known to cater to rich floral and faunal diversity specifically as home to endemic, threatened and even critically endangered species including the Philippine Eagle (*Pithecophaga jefferyi*). Centuries-old rock formations, massive boulders are also testament to its unique geodiversity. MANP has thus earned recognition as an ASEAN Heritage Site and included in the UN List of National Parks and Equivalent Reserves.

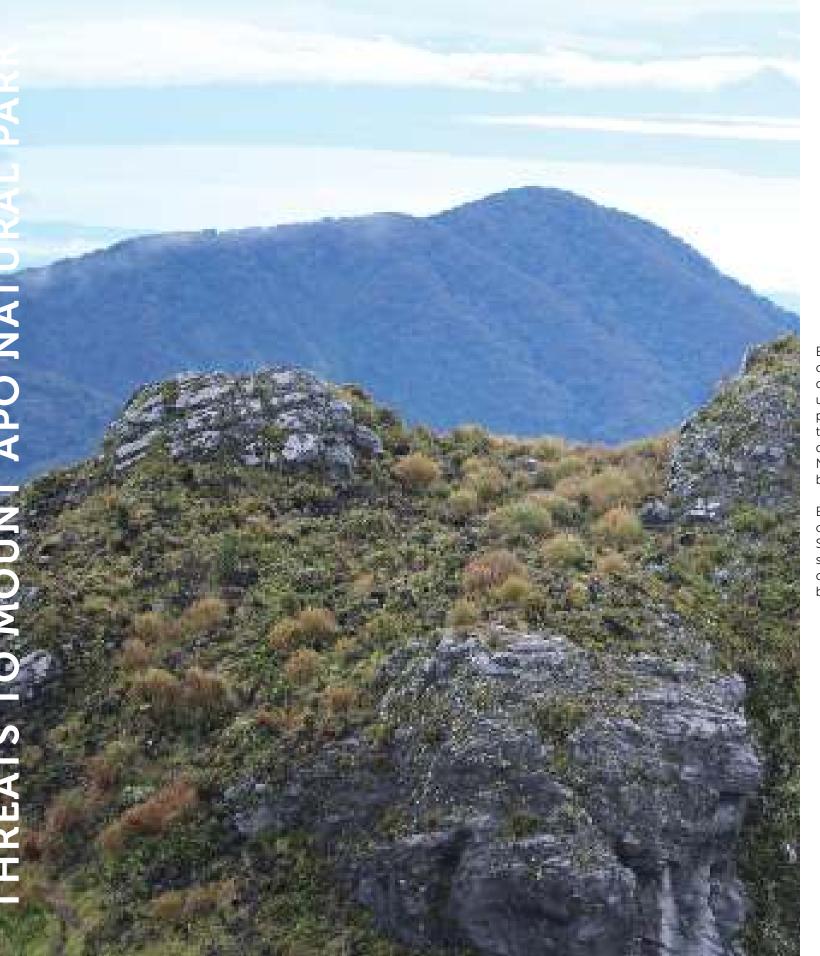
Figure 1. Habitat Map of Mt. Apo National Park (Source: http://mafi.org.ph/maps-destinations/)

The park is one of the most ecologically rich mountains in the Mindanao Region. It has a wide range of soil types and altitudes, resulting in different forest types such as lowland evergreen, lower montane, upper montane mossy or cloud and subalpine forest zones. The lowland evergreen rainforest ranges from the foot slopes to around 1200 m. It is primarily dominated by dipterocarps species and other common species such as rattans and lianas. The lower montane rainforest is the most extensive ecosystem that ranges from 1200 m up to 1800 m. Most common plants include species of Lithocarpus, Elaeocarpus, Litsea, Neolitsea, Syzygium, and some shrubs from the family of Rubiaceae and Acanthaceae (Fernando et al. 2008). It also hosts several rare, endemic bird species found only on a very few higher mountains in Mindanao, such as the Slaty-backed Jungle-flycatcher (Rhinomyias goodfellowi), the Red-eared Parrotfinch (Erythrura coloria) and the Apo Myna (Basilornis miranda) (Mallari et al., 2001). Ascending between 1800 and 2600 m in elevation, the upper montane mossy or cloud forest can be found. This forest ecosystem is characterized by steep slopes, rugged terrain, a moist climate, constant precipitation and high humidity due to dense cloud formations. The harsh climatic conditions, thin soils and the scarce and acidic plant nutrients at these elevations inhibit the succession of shrubs into forests.

Due to the diversity of its landscape, hundreds of endemic species of plants, including rare and threatened species, have been recorded in the park specifically from the families (1) Urticaceae (*Cypholophus microphyllus*, *Elatostema apoense*, *E. baruringense*, *E. inaequifolium* and *E. longipedunculatum*) at an altitude of 1800 m; (3) Fagaceae (*Lithocarpus submonticulus*) at 1700 m; (4) Nepenthaceae (*Nepenthes copelandii*) in thickets at 2400 m; (5) Piperaceae (*Peperomia elmeri* and *Piper parcirameum*) at 800-1200 m; (6) Gesneriaceae (*Cyrtandra mindanaensis* and *C. talonensis*); (7) Saxifragaceae (*Astilbe apoensis*); (8) Ericaceae (*Vaccinium sylvaticum*); and (9) Elaeocarpaceae (*Elaeocarpus burebidensis*) ().

Moreover, apart from the rich biodiversity, MANP also serve as home to indigenous communities where their livelihood depends on the resources found in the national park. MANP is also known as an ecotourism and hiking site in the region. Some of the established and known trails include the Agco Trail in Kidapawan City, New Israel trail in Makilala, Bongolanon trail in Magpet, Kapatagan trail in Digos City, Sibulan (Sta. Cruz – Tinikaran Boulders) trail, and Bansalan trail. The Sibulan (Sta. Cruz – Tinikaran Boulders) trail is the most common trail used by hikers in reaching the summit of Mount Apo. It has a distance of about 13.7 km that will pass through agroforestry farms, followed by a lush forest, and boulders trail up to the summit. In the midst of the trail are the Tinikaran Campsites where hikers may opt to take rest before proceeding to the summit. This guide book highlights the unique flowering plants found in \_\_\_\_\_\_\_\_





Endemic taxa have restricted distribution which could potentially be classified as threatened (Ellstrand and Elam, 1993). Forest and habitat degradation are prevalent as forest lands are converted for agricultural use and human settlement. Illegal tree cutting for timber and charcoal production is also an additional threat to forest health which contributes to a serious net forest loss. Recently, due to the extreme effects of drought, massive fire eats up an estimated 100 ha of forests in Mt. Apo Natural Park. Some affected areas include lowland montane forest near boulders and mini-forest of Lake Venado.

Endemic flora are considered key elements for the establishment of conservation priorities and strategies locally. The United Nations Sustainable Goal 15 promotes "protection, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss".







References:

# Acrothamnus suaveolens (Hook.f.) Quinn ERICACEAE

#### Diagnostic characters:

A small shrub with minute, sharply pointed leaves. The flowers are white, small, 5-petalled, and clustered at the end of each branch. The fruits are bright red and round.

#### Habitat and distribution:

Abundant in the scrubland near and around the Mt. Apo summit. Distributed in the Philippine islands of Luzon, Negros, and Mindanao. Also growing in Borneo, Sulawesi, the Lesser Sunda Islands, New Guinea, and Solomon Islands

#### **Conservation status:**

Not Assessed

#### Synonyms:

Leucopogon philippinensis (Merr.) Hosok., Leucopogon suaveolens Hook.f., Styphelia obtusifolia J.J.Sm., Styphelia philippinensis Merr., Styphelia spicata J.J.Sm., Styphelia suaveolens (Hook.f.) Warb. ex P.Sarasin & Sarasin, Styphelia trilocularis J.J.Sm., Styphelia vandewateri Wernham





## Adelmeria alpina Elmer ZINGIBERACEAE

### Diagnostic characters:

Clumping terrestrial herb.
The leaf blade and sheath are glabrous and the ligule is bilobed.
The inflorescence is terminal, ascending, and ovoid in shape.
The floral bracts are orange to pale-red and fruits are obovoid, greenish-red when ripe.

### Habitat and distribution:

Understorey of montane and mossy forests. Endemic to the Philippines and found in the islands of Panay, Negros, and Mindanao.

### **Conservation status:**

Least Concern (Docot et al., 2019)

### Synonyms:

Alpinia alpina (Elmer) R.M.Sm. ex M.F.Newman



### **References:** Docot, R.V.A., Banag, C.I.

& Poulsen, A.D. (2019).
Reinstatement and revision of the genus Adelmeria (Zingiberaceae) endemic to the Philippines.
Taxon 68: 499–521. https://doi.org/10.1002/tax.12071



# Aeschynanthus cardinalis (Copel. ex Merr.) Schltr. in Engl. GESNERIACEAE

### Diagnostic characters:

A climbing vine usually found in mossy forest. The stem is glabrous with leaves opposite, subcoriaceous, entire, acuminate, and very pale beneath. Flowers are in clusters of two or three on almost obsolete peduncles with hairy pedicels 1 cm long, axillary and terminal. Corolla cardinal and curved. Seeds with one very short hair at each end.

### Habitat and distribution:

Found in primary forests at medium altitude, ascending to 1,400m. Endemic to the Philippines in Luzon (Albay), Babuyan Islands, Camiguin de Babuyanes, Leyte, and Mindanao.

### **Conservation status:**

Not Assessed

### Synonyms:

Trichosporum cardinale H.F.Copel. ex Merr.



### References:

Merr., Govt. Lab. Publ. (Philipp.) 17 (1904) 46;

Merrill, E. D. (1923). *An Enumeration of Philippine Flowering Plants Volume 3.* Manila:
Bureau of Printing.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

# Agalmyla calelanensis (Elmer) Hilliard & B.L.Burtt GESNERIACEAE

### Diagnostic characters:

A well-branched epiphyte, with opposite leaves, ovate to ovate-lanceolate, apex subacute, base rounded to cordate, margins coarsely serrate or doubly serrate, and strongly anisophyllous. Flowers are in cymose cluster, funnel-shaped, arcuate with mouth nearly round. Calyx lobed nearly to the base. Easily distinguished by the long shaggy hairs on the calyx with lobes often toothed apically. Corolla is recorded to be either 'yellowish red' (Elmer), 'bright orange with reddish flush on tube outside' (Madulid et al.), and 'dark pink' (Edaño).

### Habitat and distribution:

Growing in mossy forest at an altitude ranging from 1800m - 2600m. Endemic to the island of Mindanao in the Philippines

### **Conservation status:**

Vulnerable (DAO 2017-11)

### Synonyms:

Dichrotrichum calelanense Elmer







#### References:

DENR Administrative Order. 2017. Updated national list of threatened Philippine plants and their categories. DAO 2017-11

Hilliard, O. M., & Burtt, B. L. (2002). The Genus Agalmyla (Gesneriaceae-Cyrtandroideae). Edinburgh Journal of Botany, 59(1), 1–210. https://doi.org/10.1017/s096042860200001x

Merrill, E. D. (1923). An Enumeration of Philippine Flowering Plants Volume 3. Manila: Bureau of Printing.



# Agrostophyllum saccatilabium Ames & Quisumb. ORCHIDACEAE

### Diagnostic characters:

A glabrous epiphyte with a rather stout, flattened stem, narrow at the base. Leaves narrowly linear-oblong, obtuse, restricted to the upper portion of the stems, distichous, jointed with persistent clasping rigid bases. Inflorescences terminal, capitate, pluribracteate, up to 3.5 cm wide with very numerous and crowded, yellowish flowers

### Habitat and distribution:

A cool growing epiphyte at an elevation of 300 – 1000m. Distributed in Luzon Island, Leyte, and Mindanao Island. Conservation status:

Not Assessed

Synonyms: N/A



### References:

Ames & Quisumbing (1932). Philippine Orchids, III. Philippine Journal of Science 49, p.487.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org





### References: Ames, O. (1912). Orchidaceae Novae et Criticae Insularum Philippinarum. Leaflets of Philippine Botany. Volume 5, 1565.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

# Appendicula elmeri (Ames) Ames ORCHIDACEAE

### Diagnostic characters:

An epiphytic herb that forms large clumps on trees in dense forests. The hard, tough, flattened stems are persistent with oblongelliptic, leathery, shortly pointed apically leaves. The inflorescence is borne on elongated peduncles which arise from the axils of the leaves mostly toward the end of the stems. Outer organs of the perianth greenish red and white, the inner ones red. The callus arises at the base of the lip in V-shaped form, the arms extending close to the margin and converging near the base of the middle lobe.

### Habitat and distribution:

Usually found along streams at an elevation of 400-1300m. Endemic to the Island of Mindanao in the Philippines

### **Conservation status:**

Not Assessed

### Synonyms:

Podochilus elmeri Ames





## Appendicula malindangensis (Ames) Schltr. ORCHIDACEAE

### Diagnostic characters:

A tall species of orchid with pendulous inflorescence bearing numerous blue to purplish flower. Petals are oblong with lanceolate, hooded dorsal sepal and triangular to lanceolate lateral sepals. Labellum is oblong or subquadrate, without side lobes, about 5 mm long by 2 mm wide. It has a large pocket or cup near the base formed by a transversely situated membrane.

### Habitat and distribution:

Found in mountainous region up to 1600m. Endemic to the Philippines in Negros and Mindanao Island.

### Conservation status:

Not Assessed

### Synonyms:

Podochilus malindangensis Ames



### References: Ames O. (1911). Notes on Philippine Orchids with

Descriptions of New Species, III. Philippine Journal of Science 6c, p.49.

Panal, C. L. T., Opiso, J. G., & Opiso, G. S. (2015). Conservation status of the Family Orchidaceae in Mt. Sinaka, Arakan, North Cotabato, Philippines. Biodiversitas, 16(2), 213-224. https://doi.org/10.13057/biodiv/d160217

## Ardisia scabrida Mez in Engl. PRIMULACEAE

### Diagnostic characters:

A shrub reaching 3 meters high. Branches divaricate and crowded toward the top of the stem. Leaves flat, submembranous, deep green, and punctate on both sides. Inflorescence mostly terminal and paniculate. The stalk greenish or becoming pink. Flowers pale white or pinkish, imbricate, and in the bud state distinctly twisted, falsely united at the very base. Fruits reddish, subpendulous.

### Habitat and distribution:

Growing in mossy forests at 600-1300m. Endemic to the Philippines in the Islands of Luzon, Camiguin, Biliran, Negros, Mindanao, and Sulu Archipelago

### **Conservation status:**

Not Assessed

### Synonyms:

Ardisia punctata auct. non Lindl.







### References:

Elmer, A. D. E. (1908). Six New Myrsinaceae. Leaflets of Philippine Botany. Volume 2, 439.

Elmer, A. D. E. (1910). Myrsinaceae from Mount. Apo. Leaflets of Philippine Botany. Volume 2, 660.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org





References:

# Arisaema polyphyllum (Blanco) Merr. ARACEAE

### Diagnostic characters:

A terrestrial herb with an underground stem (rhizome) and usually only has 1 leaf. The leaf has a long petiole and the blade is peltate and lobed, forming numerous elliptic and entire leaflets. The inflorescence is borne somewhere in the middle of the petiole and the spathe is usually green, with a long-pointed, almost tail-like apex.

### Habitat and distribution:

Common in the shaded areas of the mossy-montane forests of Mt. Apo Natural Park. Distributed in the major Philippines islands and in Sulawesi.

### **Conservation status:**

Not Assessed

### Synonyms:

Arisaema cumingii Schott, Arisaema sarasinorum Engl., Caladium digitatum Blanco, Calla polyphylla Blanco





## Astronia apoensis Elmer MELASTOMATACEAE

### Diagnostic characters:

A tree-like shrub reaching 5 to 7 meters high. Bark yellowish brown with branches mainly at the top. Leaves coarse and large, elliptic to oblong-elliptic, oppositely scattered, dark green, prominently 5-nerved, and rounded at the base. Flowers few, calyx urceolate with reddish scales and short obovate yellowish petals. Fruits flatly globose, dirty brown when dry with expanded 5-toothed persistent calyx rim.

### Habitat and distribution:

Commonly found along streams on the eastern slope of Mt. Apo at an elevation of 1800-2065m. Endemic to Mindanao Island, Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Astronia mearnsii Merr.



### References:

Elmer, A. D. E. (1911). New Melastomataceae. Leaflets of Philippine Botany. Volume 4, 1206.

Merrill, E.D. (1913). Studies on Philippine Melastomataceae, II. Philippine Journal of Science 8c, p.340-341.

### Begonia malindangensis Merr. BEGONIACEAE

### Diagnostic characters:

An erect, monoecious, herbaceous or suffrutescent plant reaching 20-40 cm tall. Stem dichotomously branching, terete, maroon to greenish. Leaves alternate, asymmetrical, oblong-ovate to oblong-lanceolate, glabrous, with irregularly dentate margin and asymmetrical base, apex long acuminate to subcaudate. Inflorescences terminal, unisexual with staminate or male flowers borne in groups of ca. 5, white to pinkish white and pistillate or female flowers borne in pairs, white. Capsules borne in pairs, turbinate to trigonous-ellipsoid, green when young, reddish green when mature, brown when dry, with 3 subequal rounded-triangular wings.

### Habitat and distribution:

Growing in the shaded areas of montane forest of Mt. Malindang, Mt. Kalatungan Range Natural Park, Mt. Kiamo, Todaya, and Mt. Apo. Endemic to Mindanao, Philippines

### **Conservation status:**

Least Concern (Naive et al. 2022)

### Synonyms:

N/A







### References:

Merrill, E.D. (1911). The Philippine Species of Begonia. Philippine Journal of Science 6c, p.391-392.

Naive, M.A.K., Cababan, M.A.L., Lubos, L.C., & Hughes, M. (2022). Taxonomy of the genus Begonia (Begoniaceae) in Mindanao, Philippines III: New insights into the morphology and distribution of Begonia malindangensis and B. mindanaensis. Phytotaxa, 564 (2),265–272. https://doi. org/10.11646/phytotaxa.564.2.10



## Liparis latifolia Lindl. ORCHIDACEAE

### Diagnostic characters:

An epiphyte with erect pseudobulbs clustered on a condensed rhizome. Leaves characterized as lanceolate to lanceolate-oblong, acute to acuminate, obscurely veined (only mid-vein recognizable), with flat margins. Flowers mainly orange-brown to reddish-brown (lip orange-yellow). Sepals 5-veined. Petals acute, with recurved margins. Lip flabellate, apically bilobed bearing a pair of low, subbasal keels.

### Habitat and distribution:

Found in tropical rainforest of Mindanao Island, Philippines and in the country of China, Thailand, and New Guinea.

### **Conservation status:**

Not Assessed

### Synonyms:

Blepharoglossum latifolium (Blume) L.Li, Cestichis latifolia (Lindl.) Pfitzer, Leptorkis latifolia (Lindl.) Kuntze Malaxis latifolia Blume, Stichorkis latifolia (Lindl.) Pfitzer



### References:

Tetsana, N., Sridith, K., Watthana, S., & Pedersen, H. Æ. (2019). A taxonomic revision of Liparis (Orchidaceae: Epidendroideae: Malaxideae) in Thailand. Phytotaxa, 421 (1), 1–65. https://doi.org/10.11646/phytotaxa.421.1.1



## Calanthe davaensis Ames ORCHIDACEAE

### Diagnostic characters:

An intermediate-sized terrestrial orchid with numerous leaves. The flowers are borne on a long stalk (peduncle) and are quite small and white. The labellum is fused to the column and is 4-lobed; the 2 front lobes are truncate while the other 2 at the sides are rounded. The nectar spur is also intermediate.

### Habitat and distribution:

Uncommon in the montane forest floor. A species endemic to the Philippines.

### Conservation status:

Not Assessed

### Synonyms:

N/A



References:



# Ceratostylis ramosa Ames & Rolfe in Ames ORCHIDACEAE

### Diagnostic characters:

A caulescent epiphyte with lanceolate leaves and cluster of bracts, single flowered inflorescence, white in color.

### Habitat and distribution:

Grows on montane ridges at elevations around 500 to 1600 meters. Endemic to the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

N/A



### References:

Ames O. (1915). Orchidaceae, Illustrations and Studies of the Family Orchidaceae. The Genera and Species of Philippine Orchids, 2; 86.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org





References:

# Ceratostylis ramosa Ames & Rolfe in Ames ORCHIDACEAE

### Diagnostic characters:

An epiphytic orchid with thick, lanceolate leaves. The flowers are axillary and solitary. The petals and sepals are orange-red. The labellum is highly-reduced in size to almost absent.

### Habitat and distribution:

Growing on tree trunks at the montane forest. Endemic to the Philippine Islands.

### Conservation status:

Not Assessed

### Synonyms:

Ceratostylis latipetala Ames, Ceratostylis rubra Ames



## Cinnamomum utile Kosterm.

### Diagnostic characters:

A tree reaching a height of 10 - 15 m and a diameter at breast height of around 30-60 cm. The bark and leaves have a very strong cinnamon odor.

### Habitat and distribution:

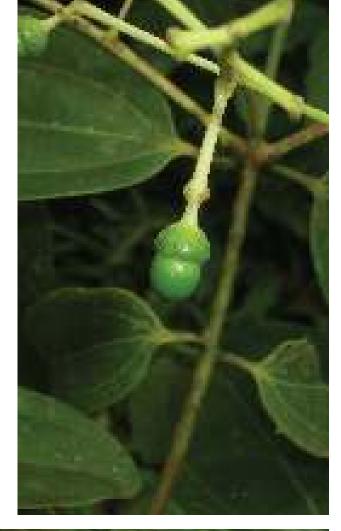
An endemic species in the Philippines with occurrences from mid to high-elevation primary forests of Mt. Apo, Davao del Sur and Makbak, Iloilo.

### **Conservation status:**

Critically Endangered (IUCN)

### Synonyms:

N/A







### References:

Energy Development Corporation (EDC). (2020). Cinnamomum utile. The IUCN Red List of Threatened Species 2020: e.T145405929A145416646. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS. T145405929A145416646.en. Accessed on 09 September 2023



## Cirsium luzoniense Merr. ASTERACEAE

### Diagnostic characters:

A strict, erect, stout perennial plant that can reach a height of nearly 1m. The short branches bear flowering head in the upper part. Leaves alternate, lanceolate to oblanceolate, with lobed and toothed margins. Uppermost leaves are very spiny. Flowers are pale purple to nearly white in color.

### Habitat and distribution:

Growing in the exposed area of the Mt. Apo summit along with grasses and other shrubs. Distributed in the high elevation mountains of Luzon and Mindanao, and endemic to the Philippines.



Not Assessed

Synonyms: N/A



References:

## Clerodendrum lanuginosum Blume LAMIACEAE

### Diagnostic characters:

A shrub about 1.5 m high, most parts prominently hirsute or hairy. Branches terete, pale-brownish. Leaves subcoriaceaous, ovate to oblong-ovate, acuminate, base cordate and has distantly denticulate margins. Panicles terminal, few-flowered all covered with dark-purple, crisped, spreading hairs. Flowers white.

### Habitat and distribution:

Found in thickets and secondary forests at low altitudes in the Philippines, Borneo, and Moluccas

### **Conservation status:**

Least Concern (IUCN 2021)

### Synonyms:

Bignonia comosa Roxb.,
Spathodea comosa (Roxb.) G.Don,
Clerodendrum cumingianum
Schauer, Clerodendrum
lanuginosum var. adpressipilum
Moldenke, Clerodendrum
leparense Moldenke,
Clerodendrum macrocalyx
H.J.Lam, Clerodendrum
wenzelii Merr.







#### References:

Merrill, E.D. (1914). Plantae, Wenzelianae, II. Philippine Journal of Science 9c, p.385.

Merrill, E. D. (1923). An Enumeration of Philippine Flowering Plants Volume 3. Manila: Bureau of Printing.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org



# Coelogyne candoonensis Ames ORCHIDACEAE

### Diagnostic characters:

A medium-sized epiphyte with linear, tapering pseudobulbs and narrowly elliptic to lanceolate, acute, 5-nerved leaves.
Inflorescence terminal with deciduous yellowish chafflike floral bracts and 3-lobed labellum.

### Habitat and distribution:

Found in mossy forests at elevations around 1500 meters. Endemic to Mindanao Island, Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

N/A



References: Ames O. (1923). Schedulae Orchidianae. New or Noteworthy Orchids, 6; 18.



# Crepidium atrosanguineum (Ames) Marg. & Szlach. ORCHIDACEAE

### Diagnostic characters:

A terrestrial herb up to 50 cm tall. Leaves wide, elliptical, and acuminate with canaliculated petiole, the basal portion sheathing the stem. Flowers purple and numerous.

### Habitat and distribution:

Grows in forests and endemic to Mindanao Island, Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

*Malaxis atrosanguinea* Ames



References: Ames O. (1923). Schedulae Orchidianae. New or Noteworthy Orchids, 6; 30.





### References:

Ames O. (1915). Orchidaceae, Illustrations and Studies of the Family Orchidaceae. New or Noteworthy Orchids from Different Parts of the World, 7; 111.

Merrill, E. D. (1924). An
Enumeration of Philippine
Flowering Plants Volume 1. Manila:
Bureau of Printing

# Crepidium bracteosum (Ames) Szlach. ORCHIDACEAE

### Diagnostic characters:

An epiphytic herb reaching up to 30 cm high. Roots fibrous with pseudobulbs covered with scarious sheaths. Leaves lanceolate ca. 10 cm long and 4 cm wide. Inflorescence linear and multi-flowered. Labellum trilobate.

### Habitat and distribution:

Found along streams, in forests at an elevation of 100 to 1400 meters. Endemic to the Philippines in Luzon and Mindanao Island.

**Conservation status:**Not Assessed

Synonyms:

Malaxis bracteosa Ames





# Cymboglossum cymbidiifolium (Ridl.) Ormerod & Cootes ORCHIDACEAE

### Diagnostic characters:

An epiphyte with very small stemlike pseudobulbs hidden within the leaf sheaths. Leaves acuminate and linear, about 5 in two rows. Flowers numerous and crowded borne on raceme shorter than the leaves. The broad lateral sepals are separated to the base of the lip, spreading widely open. The lip consists of two broad bars running the whole length of the disc between the lateral wings, and covering a nectary formed by the boat-shaped floor of the lip.

### Habitat and distribution:

Grows in tree trunks in montane forests at elevations of 500 to 1015 meters. Distributed in major Philippines islands, Borneo, and Sumatra.

### **Conservation status:**

Not Assessed

### Synonyms:

Ascidieria cymbidiifolia (Ridl.) W.Suarez & Cootes, Eria cymbidiifolia Ridl., Cymboglossum cymbiforme (J.J.Sm.) Rauschert, Eria cymbiformis J.J.Sm.



### References:

Britten, J. (1898). The Journal of Botany, British and Foreign, 36, p.212.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

# **Dendrochilum coccineum H.A.Pedersen & Gravend.**ORCHIDACEAE

### Diagnostic characters:

A small epiphytic herb with pseudobulbs clustered on a short rhizome. It is characterized by its leathery leaves and deep crimson (red) flowers with the sepals and petals having revolute margins, and the three long keels of its labellum.

### Habitat and distribution:

Grows in mossy and montane forests at elevations between 1,400 and 1,800 metres. Endemic to the Philippines in the island of Mindanao.

### **Conservation status:**

Not Assessed

### Synonyms:

N/A





### References:

Pedersen, H. Æ., Gravendeel, B., & Mudiana, D. (2004). Three New Species of Dendrochilum (Orchidaceae) and their Phylogenetic Positions According to Plastid and Nuclear Ribosomal its Sequences. Blumea, 49(2), 351–360. https://doi.org/10.3767/000651904x484314

POWO (2023). "Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; http://www. plantsoftheworldonline.org/





### References:

Ames,O. (1906). Descriptions of New Species of Acoridium from the Philippines. Proceedings of the Biological Society of Washington. 19, p.146.

POWO (2023). "Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; http://www. plantsoftheworldonline.org/

# **Dendrochilum parvulum (Ames) Pfitzer** ORCHIDACEAE

### Diagnostic characters:

A small epiphytic herb with monophyllous pseudobulbs enveloped by tubular acute sheaths. Leaves linear-oblong, obtuse, truncate, and prominently 3-nerved. Flowers numerous with 3-lobed labellum.

### Habitat and distribution:

In mossy and montane forests at elevations around 1200 meters. Endemic to the Philippines in Luzon and Mindanao Islands.

### **Conservation status:**

Not Assessed

### Synonyms:

Acoridium parvulum Ames





# Dianella javanica (Blume) Kunth ASPHODELACEAE

### Diagnostic characters:

Plant reaching up to 2m high with distichous leaves concentrated towards the ends of the branches. Perianth segments pale blue, white to yellow or lilac, spreading 8–12mm long. Fruits are green or yellow at first before turning black.

### Habitat and distribution:

Grows in a wide variety of habitats including mossy forests, thickets, forest borders, in debris of craters, among rocks and in exposed places at 1500–3000 meters. Widely distributed in Malesia (including the Philippines) and South West Pacific.

### **Conservation status:**

Not Assessed

### Synonyms:

Eustrephus celebicus (Blume)
D.Dietr., Dianella austrocaledonica
Seem., Dianella celebica (Blume)
Kunth, Dianella javanica (Blume)
Kunth, Rhuacophila
celebica Blume



References:

# Dimorphanthera apoana (Merr.) Schltr. ERICACEAE

### **Diagnostic characters:**

An epiphytic dense shrub, 2–3m, or climbing up to 6m with numerous stems. Branchlets are reddish brown and mostly glabrous at the tips, rarely pubescent. Inflorescences 5-7 flowered, sessile clusters. Flowers are campanulate, deep to pale red in color. Fruit subglobular, truncate, blackish, and fleshy.

### Habitat and distribution:

In mossy forest, commonly found on exposed ridges or in summit vegetation. Endemic to the Philippines and distributed in the islands of Luzon, Negros, Panay, and Mindanao.

### **Conservation status:**

Not Assessed

### Synonyms:

Vaccinium apoanum Merr.







References:





### References:

Elmer, A.D.E. (1911). The Ericaceae of Mount Apo. Leaflets of Philippine Botany. Volume 3, 1101-1102

Merrill, E. D. (1923). An Enumeration of Philippine Flowering Plants Volume 3. Manila: Bureau of Printing.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

# Gaultheria apoensis (Elmer) Kron & P.W.Fritsch ERICACEAE

### Diagnostic characters:

An epiphyte covered with setose hairs, the young portion of twigs densely covered with reddish brown hairs. Leaves alternate, elliptic, the upper surface shiny green with strigose hairs while the under surface curing brown, beneath setose hairy. Flowers solitary or few clustered from the leaf axils, subcampanulate with 5 acute or obtuse slightly reflexed teeth.

### Habitat and distribution:

In dwarfed mossy forest, on exposed peaks and ridges at an altitude about 2500 meters. Endemic to Luzon (Camarines Sur) and Mindanao (Bukidnon, Davao, and Davao del Sur) of the Philippines.

### Conservation status:

Not Assessed

### Synonyms:

Diplycosia apoensis Elmer





### Gunnera macrophylla Blume GUNNERACEAE

### Diagnostic characters:

A herbaceous plant characterized by the presence of numerous stolon and very short stems. Leaves reniform to cordate, with lobed margins and prominent veins. Inflorescence is a subterminal panicle with many spikes, sessile or short-peduncled often hidden under the leaves. Lower spikes contain the female flowers while the upper spikes are male flowers, and sometimes intermixed bisexual flowers in the spikes. Fruits are smooth spherical drupes with one seed.

#### Habitat and distribution:

Thrives well in montane environments along wet or damp areas in lightly shaded to open areas of disturbed habitats at altitudes ranging from 750 m to 3000 m above sea level. Distributed in Sumatra, Java, Borneo, the Philippines, Sulawesi, New Guinea, and the Solomon Islands.

### **Conservation status:**

Not Assessed

### Synonyms:

Gunnera erosa Blume, Pseudogunnera macrophylla (Blume) Oerst., Sarcospermum petasites Reinw., Gunnera reniformis Ridl.



#### References:

Balangcod, K.D. & Balangcod, A.K.D. (2021). Gunnera macrophylla Blume Gunneraceae. Ethnobotany of the Mountain Regions of Southeast Asia, 539-543. https://doi.org/10.1007/978-3-030-38389-3\_241

POWO (2023). "Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; http://www. plantsoftheworldonline.org/



## Impatiens platypetala Lindl. BALSAMINACEAE

### **Diagnostic characters:**

A perennial herb reaching up to 1 meter in height, erect or decumbent. Leaves have long and large stalks, oval to lanceolate-ovate with blunt base, pointed tip, and serrated edge. Flowers bright orange that has a white eye in the center, solitary and growing in the axillary of the leaves on the upper stem.

### Habitat and distribution:

I. platypetala is widely distributed in Southeast Asia including the Philippines. It is a variable species that occurs in lowlands and montane forests, growing in gullies, along streams, in damp, shaded and semishaded localities, forest clearings, at 300 - 2400 m altitude.

#### **Conservation status:**

Not Assessed

### Synonyms:

Impatiens aurantiaca Teijsm. ex Koord., Impatiens burkei Hook.f., Impatiens elmeri Hook.f., Impatiens hutchinsonii Hook.f., Impatiens mearnsii Hook.f., Impatiens merrillii Hook.f., Impatiens montalbana Hook.f., Impatiens pubisepala Hook.f., Impatiens quercetorum Hook.f.



### References:

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards.Co's Digital Flora of the Philippines. www.philippineplants.org

POWO (2023). "Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; http://www.plantsoftheworldonline.org/

Taha RM. Impatiens platypetala Lindley In: van Valkenburg JLCH, Bunyapraphatsara N, editors. Plant Resources of South-East Asia No. 12(2): Medicinal and poisonous plants 2. Leiden, Netherlands: Backhuys Publisher; 2001. p. 309-310.

## Lasianthus clementis Merr. RUBIACEAE

### Diagnostic characters:

A shrub well-characterized by its olivaceous or dirty-yellowish pubescence, sessile white flowers usually axillary, solitary or two or three in an axil, and absence of bracts. Fruits bright-blue, subglobose.

### Habitat and distribution:

Found in primary forests, ascending to 700 meters. Distributed in major Philippines islands, Java, and New Guinea.

### **Conservation status:**

Not Assessed

### Synonyms:

Lasianthus bulusanensis Elmer, Lasianthus canephoroides Wernham, Lasianthus neglectus Valeton ex Bakh.f.





### References:

Merrill, E.D. (1908). New Philippine Plants from the Collections of Mary Strong Clemens, I. Philippine Journal of Science 3c, p.164-165.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

POWO (2023). "Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; http://www.plantsoftheworldonline.org/





### References:

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

Thompson, J. (1989). A revision of the genus Leptospermum (Myrtaceae). Telopea 3, p.394.

# Leptospermum amboinense Blume MYRTACEAE

### Diagnostic characters:

Shrub or tree reaching 3m to 7m high. Leaves lanceolate, the apex usually acute or rounded, not strongly lemon-scented. Flowers white, occurring singly on modified shoots in adjacent leaf-axils or at the ends of very short axillary branches.

### Habitat and distribution:

Exposed ridges in high montane cloud forests from 1000-2700m. Distributed in Sumatra to Australia and in Luzon, Negros, and Mindanao Island of the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Macklottia amboinensis (Blume) Korth., Leptospermum annae Stein, Leptospermum flavescens var. angustifolia Ridl., Leptospermum petersonii subsp. lanceolatum Joy Thomps.





# Lysimachia sikokiana Miq. PRIMULACEAE

### Diagnostic characters:

Erect or decumbent herb reaching 30-60 cm high. Leaves alternate, elliptic-lanceolate, acute, sometimes shortly acuminate, base acute to rounded. It has yellow flowers that is axillary, solitary, and confined to the upper part of the plant.

### Habitat and distribution:

Found in mossy forests in damp ravines, at 1200 - 2300 meters. Occurs in the countries like China, Japan, Ryukyu Islands, Taiwan, Thailand, and the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Lysimachia garrettii H.R.Fletcher



### References:

Contributions to the Flora of Siam. Additamentum XL. (1936). Bulletin of Miscellaneous Information (Royal Botanic Gardens, Kew), 1936(1), 34–47. https://doi.org/10.2307/4118565

Flora Malesiana, ser. 1, 6 (1962), 178.

# *Medinilla apoensis* C.B.Rob. MELASTOMATACEAE

### Diagnostic characters:

Tall understorey shrub or epiphyte. The leaves are opposite, largesized with bright pink flowers appearing in well-branched, pendant clusters that arise from the distinctively veined foliage.

### Habitat and distribution:

Growing in open, quite exposed areas in the mossy forest, either terrestrial or epiphytic. Endemic to the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Medinilla confluentinervia Elmer







References:



# Medinilla astronioides Triana MELASTOMATACEAE

### Diagnostic characters:

A tall terrestrial shrub or small tree up to 4 meters in height. The leaves and stems are glabrous. The blade is simple, opposite, elliptic, entire, 5-plinerved. The inflorescences are terminal cymes and glabrous. The bracts and bracteoles are absent. The flowers are 5-merous.

### Habitat and distribution:

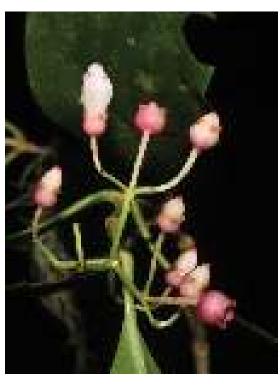
Growing in the mossy forest. Endemic to the Philippines and found in the islands of Luzon, Mindoro, and Mindanao.

### **Conservation status:**

Not Assessed

### Synonyms:

Medinilla acuminata Merr., Medinilla bolsteri Merr., Medinilla negrito Elmer, Medinilla versicolor Elmer



References:





References:
DENR Administrative Order. 2017.
Updated national list of threatened
Philippine plants and their
categories. DAO 2017-11

## Medinilla banahaensis Elmer MELASTOMATACEAE

### Diagnostic characters:

Epiphytic glabrous shrub reaching 1–2m high. Leaves are opposite. The flowers are 5-merous. Fruits globose with deep blue to purple in color..

### Habitat and distribution:

An epiphytic or terrestrial species growing in the montane-mossy forest, often seen in exposed areas. Another Philippine-endemic Medinilla.

### **Conservation status:**

Endangered (DAO 2017-11)

### Synonyms:

N/A





## Medinilla calelanensis Elmer MELASTOMATACEAE

### Diagnostic characters:

An epiphytic shrub that can grow 3-4 m high. Bark is greyish and leaves are opposite, shortly petiolate, 5- to 7-plinerved. Flowers are white to pink in color. Fruits cup-shaped and pink to dark brown in color.

### Habitat and distribution:

Found in the open and exposed areas of the mossy forest. Endemic to the island of Mindanao, Philippines.

### Conservation status:

Endangered (DAO 2017-11)

### Synonyms:

N/A



References:
DENR Administrative Order. 2017.
Updated national list of threatened
Philippine plants and their
categories. DAO 2017-11

### Melastoma malabathricum L. MELASTOMATACEAE

### Diagnostic characters:

A terrestrial shrub which can grow up to 4 meters in height. The leaves, stems, and hypanthia are characteristically densely hairy. The leaves are opposite, elliptic, entire, and 3 to 5-plinerved. The inflorescences are few to many, terminal and the flowers are purplish-pink and usually 5-petalled.

### Habitat and distribution:

Common shrubs of the montane and mossy forests, often found flowering in open and exposed areas. With a wide distribution ranging from Seychelles, Nicobar Islands, Sri Lanka, the Himalayas, south of China, Hainan, and mainland Southeast Asia to the Ryukyus, Taiwan, the Philippines, Java, Moluccas, Lesser Sunda Islands, Marianas, Caroline Islands, and Australia.

### **Conservation status:**

Not Assessed

### Synonyms:

Melastoma polyanthum Blume

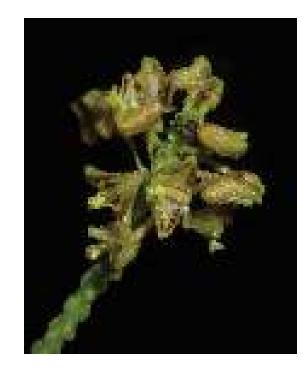






References:





#### References:

Ames, O. (1912). Orchidaceae Novae et Criticae Insularum Philippinarum. Leaflets of Philippine Botany. Volume 5, 1577.

Cootes, J. & Suarez, W. (2008). New Combinations in the Subtribe Eriinae. Australian Orchid Review. 73 (3), 22-23.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

# Mycaranthes mindanaensis (Ames) Cootes & W.Suarez ORCHIDACEAE

### Diagnostic characters:

An epiphyte characterized by shorter bracts and much larger callus that passes into a central keel which extends to the base of the lip. Stems ascending, ensiform, pale green. Leaves oblonglanceolate, shallowly folded on the upper side toward the base with terete rachis and reflexed bracts that is pale green. Flowers divaricate, lateral wings of the lip with purple or pale-yellow spot.

### Habitat and distribution:

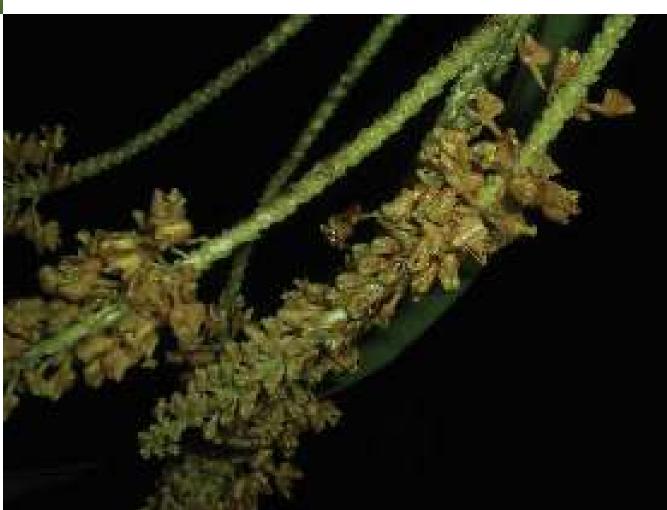
This species has a wide elevational range of between 200 and 1,200 meters. Endemic to the Philippines recorded in Luzon Island, Negros and Panay in the Visayas, and the province of Bukidnon and Davao del Sur in Mindanao.

#### Conservation status:

Not Assessed

### Synonyms:

Eria mindanaensis Ames





### Mycetia cauliflora Reinw. RUBIACEAE

### **Diagnostic characters:**

A shrub, 1-2m tall. Leaves oblong-lanceolate to obovate, glabrous above, puberulous on the midrib below. Flowers bright yellow in terminal or cauliflorous, short, few-flowered, trichotomous cymes. Fruit subglobose, slightly scabrous, juicy, snow-berry white in color.

### Habitat and distribution:

Grows in damp forest at an elevation ranging from 600-1200 meters. Widely distributed in countries such as Borneo, Java, Lesser Sunda Island, Malay Peninsula, Sulawesi, Sumatra, Thailand, and the Philippines (Mindoro and Mindanao Island).

### **Conservation status:**

Not Assessed

### Synonyms:

Adenosacme apoensis Elmer,
Adenosacme lanceolata Ridl.,
Adenosacme scortechinii King
& Gamble, Bertiera chrysantha
Hassk., Bertiera lateriflora Blume,
Bertiera macrocalyx Hassk.,
Mycetia apoensis (Elmer) Govaerts,
Mycetia cauliflora var. macrocalyx
Hassk., Mycetia javanica Hook.f.,
Mycetia lanceolata Ridl., Mycetia
lateriflora (Blume) Reinw. ex
Korth., Mycetia scortechinii (King &
Gamble) Ridl., Mycetia yatesii Merr.



### Nepenthes copelandii Merr. ex Macfarl. in Engl. NEPENTHACEAE

### Diagnostic characters:

Terrestrial or epiphytic climber. Stem cylindric, glabrous or sparsely puberulous. Leaves up to 28 cm long, 6 cm wide, petiolate, lamina linear, with acute or obtuse apex and attenuate base. The midrib on lower surface with appressed hairs. Lower pitchers are elongate, 26 cm long, 5.5 cm wide with the basal part ovoid, variously inflated, becoming cylindrical and infundibular towards the pitcher opening. Wings always present on lower pitchers. Upper pitchers up to 12 cm tall, 4.5 cm wide, wholly infundibular, strongly elongated; wings reduced to narrow ridges. Lid elliptic-ovate, 4.5 cm long, 4 cm wide, both the upper and lower surfaces may be yellow, orange, or red, often with darker blotches.

#### Habitat and distribution:

This species is confined to Mt. Apo and Mt. Pasian in Mindanao and the neighboring island of Camiguin and is reported to grow in mossy, lower, and upper montane forest particularly common in humid ridges at an elevation of 2,500 to 3.000 meters.

#### Conservation status:

Endangered (DAO 2017-11)

### Synonyms:

N/A





### References:

DENR Administrative Order. 2017. Updated national list of threatened Philippine plants and their categories. DAO 2017-11

Gronemeyer, T., Coritico, F., Wistuba, A., Marwinski, D., Gieray, T., Micheler, M., Mey, F., & Amoroso, V. (2014). Four New Species of Nepenthes L. (Nepenthaceae) from the Central Mountains of Mindanao, Philippines. Plants, 3(2), 284–303. https://doi.org/10.3390/plants3020284

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

Macfarlane, J.M. (1927). The Philippine Species of Nepenthes. Philippine Journal of Science 33 (2), 127-140.





# Nertera granadensis (Mutis ex L.f.) Druce RUBIACEAE

### Diagnostic characters:

Diagnostic characters: An epiphytic, creeping herb that produces star-shaped flowers and round berry fruits usually orange in color but also white, yellow, and cream.

#### Habitat and distribution:

On ground at the shaded parts of the mossy-montane forest. Widely distributed from Subtropical and Tropical Asia, Australia, to the Pacific, Mexico, the Caribbean, South America, and Subantarctic Islands. Also found in the island of Madagascar.

### Conservation status:

Not Assessed

### Synonyms:

Coprosma granadensis (Mutis ex L.f.) Heads, Gomozia granadensis Mutis ex L.f.







#### References:

Elmer, A.D.E. (1911). Philippine Rubiaceae. Leaflets of Philippine Botany. Volume 1, 1-41.

Merrill, E. D. (1923). An Enumeration of Philippine Flowering Plants Volume 3. Manila: Bureau of Printing.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

### Oldenlandia apoensis Elmer

### Diagnostic characters:

A shrub reaching 1 to 2 m high. Leaves measures 7-12 cm long and 1.5-3 cm wide, lanceolate, slenderly acuminate, base acute, nerves 5 to 7 pairs, glabrous on both sides. Inflorescence lax and axillary, slenderly paniculate. The main peduncles subtended by foliaceous bracts, the ultimate ones 3-flowered and subtended by setaceous bracts.

### Habitat and distribution:

Found in forests at elevations around 1,200 to 1,800m. Common in Mt. Apo and other provinces in Mindanao, and from Central Leyte. Endemic to the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Hedyotis apoensis (Elmer) Elmer



# *Peperomia rubrivenosa* C. DC. PIPERACEAE

### Diagnostic characters:

An epiphytic herb. Leaves opposite, sometimes ternate above, obovate to rounded-ovate 1.4 to 2.5 cm long, 1-2 cm wide, base acute, 3-nerved, apex obtuse to rounded, glabrous on both surfaces to sparsely pilose on both surfaces. Spikes erect, solitary to quaternate, axillary and terminal, fleshy, subdensely flowered, 4.5 to 9.5 cm long. Fruits subglobose to globose, brown.

#### Habitat and distribution:

Commonly found creeping and forming patches in thin earth of large, moss-covered boulders lying in streamlets of dense woods near the Sibulan River in Mt. Apo. Endemic to the Philippines

### **Conservation status:**

Not Assessed

### Synonyms:

Peperomia kotoensis Yamam., Peperomia macgregorii C.DC





#### References:

De Candolle, C. (1910). A Revision of Philippine Piperaceae. Philippine Journal of Science 5c, 405-463.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

Quisumbing, E. (1930). Philippine Piperaceae. Philippine Journal of Science 43 (1), 1-246.



### Phalaenopsis sanderiana Rchb.f. orchidaceae

### Diagnostic characters:

An epiphyte with elliptic to oblong-elliptic leaves, obtuse rounded, tapered to the conduplicate base. Flowers nearly white suffused with pink. The labellum or lip tinged with purple, yellow, and golden-brown spots.

### Habitat and distribution:

Usually found growing in branches of trees at an elevation of 500 meters. Endemic in the island of Mindanao in the Philippines.

#### **Conservation status:**

Endangered (DAO 2017-11)

### Synonyms:

Phalaenopsis amabilis var. sanderiana (Rchb.f.) R.S.Davis, Phalaenopsis amabilis subvar. sanderiana (Rchb.f.) Ames,

Phalaenopsis aphrodite var. sanderiana (Rchb.f.) Quisumb., Phalaenopsis alcicornis Rchb.f., Phalaenopsis amabilis f. alba (A.H.Kent) Ames, Phalaenopsis amabilis f. marmorata (Rchb.f.) Ames, Phalaenopsis amabilis f. punctata (O'Brien) Ames, Phalaenopsis sanderiana subvar. alba A.H.Kent, Phalaenopsis sanderiana f. alba (A.H.Kent) Christenson, Phalaenopsis sanderiana var. alba (A.H.Kent) Stein, Phalaenopsis sanderiana subvar. marmorata (Rchb.f.) A.H.Kent, Phalaenopsis sanderiana var. marmorata Rchb.f., Phalaenopsis sanderiana var. pulcherrima Rolfe, Phalaenopsis sanderiana var. punctata O'Brien, Phalaenopsis sanderiana subvar. punctata (O'Brien) A.H.Kent



### References:

Ames O. (1908). Studies in the Orchid Flora of the Philippines. Orchidaceae, Illustrations and Studies of the Family Orchidaceae. Volume 2, 17 - 257.

DENR Administrative Order. 2017. Updated national list of threatened Philippine plants and their categories. DAO 2017-11

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

POWO (2023). "Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; http://www. plantsoftheworldonline.org/



### Pholidota carnea (Blume) Lindl. ORCHIDACEAE

### Diagnostic characters:

An epiphyte characterized by oval-shaped reddish to brown pseudobulbs carrying 2, apical, narrowly lanceolate, acute, 3 veined-leaves. Flowers pale brown-orange, lip sometimes differently colored, or with yellow or orange spots.

### Habitat and distribution:

Epiphyte in montane forest at an elevation around 1100 to 2700 m. Distributed in the Malesia region including the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Coelogyne carnea Rchb.f., Crinonia carnea Blume, Pleione carnea (Blume) Kuntze



### References:

Kurniawan, F. Y., Putri, F., Suyoko, A., Masyhuri, H., Sulistianingrum, M. P., & Semiarti, E. (2020). The diversity of wild orchids in the southern slope of Mount Merapi, Yogyakarta, Indonesia eight years after the 2010 eruption. Biodiversitas, 21(9). https://doi.org/10.13057/biodiv/d210964

Pholidota carnea. Retrieved from Orchids of New Guinea: http://www.orchidsnewguinea.com/





### References: Ames O. (1909). Notes on Philippine Orchids with Descriptions of New Species, II. Philippine Journal of Science 4c, 663-676.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

### Phreatia sulcata (Blume) J.J.Sm. ORCHIDACEAE

### Diagnostic characters:

Pseudobulbs clustered, rounded, enveloped by 1 to 2 leaves, oblong-lanceolate, 8 to 10.5 cm long and 1.5 cm wide. Inflorescence bracts scarious, tubular, and slightly rigid. Numerous flowers, white, and odorless.

### Habitat and distribution:

Thrives in shady lower montane forests at elevations of 800 to 2000m. Found in Borneo, Java, Lesser Sunda Islands, Malay Peninsula, Moluccas, Sumatra, Thailand, and the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Dendrolirium sulcatum Blume, Eria sulcata (Blume) Lindl., Pinalia sulcata (Blume) Kuntze, Phreatia bracteata Ames



## *Pipturus asper* Wedd. URTICACEAE

### **Diagnostic characters:**

A small tree with tiny flowers clustered at the stems. The leaves are alternate and long petiolate. The leaf is ovate with crenate to serrulate margin and acute to acuminate apex. The leaf's upper side is green while the lower side is whitish. The fruits are white berries.

### Habitat and distribution:

Growing in the Leptospermum flavescens-dominated mossy forest. Common in the Philippines and in the Ryukyu Islands, Taiwan, Moluccas, and islands of the West Philippine Sea (South China Sea).

### **Conservation status:**

Not Assessed

### Synonyms:

Perlarius asper Kuntze, Pipturus arborescens C.B.Rob., Urtica arborescens Blanco, Urtica arborescens Link, Urtica baccifera Blanco









# Pittosporum pentandrum (Blanco) Merr. PITTOSPORACEAE

### Diagnostic characters:

A tree reaching a height up to 20m. Leaves narrowly elliptic, 6 to 15 cm long and 1 to 2 cm wide, gradually narrowed at both ends. Flowers white, fragrant, and crowded in panicles. Fruit small, globular, pale yellow to orange with seeds covered by a glossy red, oily, and sticky mucus, having a petroleum-like odor.

### Habitat and distribution:

Found in secondary forests at low and medium elevation, ascending to 2,300 m from northern Luzon to Palawan, and Mindanao. It is native to the Philippines, China, Taiwan, and Indonesia.

### Conservation status:

Not Assessed

### Synonyms:

Aquilaria pentandra Blanco, Pittosporum brachysepalum Turcz., Pittosporum fernandezii Vidal ex Fern.-Vill., Pittosporum pseudostipitatum Merr.



#### References:

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

Stuart Exchange's Philippine Medicinal Plants. http://www. stuartxchange.com/Mamalis.html



### Persicaria chinensis (L.) H.Gross POLYGONACEAE

### Diagnostic characters:

A perennial herb with varying height depending on the habitat. Flowers small with five white or pinkish persistent tepals. Fruit surrounded by fleshy tepals that appears to be a white papery layer even until the fruit becomes complete dry.

### Habitat and distribution:

Usually found in wet valleys, mixed forests, thickets, or on grassy or mountain slopes at an elevation of 300-3000m. The species originated in Eastern, Southeast and South Asia but has been introduced to other geographical areas. Widely distributed throughout the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Polygonum chinense L.



### References:

Ghimire, B., G. E. Choi, M. J. Jeong, H. Lee, K. M. Lee, S. W.Son, C. H. Lee and G. U. Suh. 2016. Fruit morphology and anatomy of Persicaria chinensis (Polygonaceae). Journal of Japanese Botany 91: 218–225.

Lai SM, Sudhahar D, Anandarajagopal K: Evaluation of Antibacterial and Antifungal activities of Persicaria chinensis Leaves. International Journal of Pharmaceutical Sciences and Researches 2012; Vol. 3(8): 2825-2830.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

### Rhododendron apoanum Stein ERICACEAE

### Diagnostic characters:

An erect shrub, mostly epiphytic reaching to a height of 1m., commonly branching from the base and branching profusely above as well. Twigs rounded, densely covered with dark-brown scales that become paler giving the stems a grey appearance with age. Leaves 3–6 together in loose pseudowhorls, elliptic to obovateelliptic in shape. Flower buds ovate, broadly pointed, with all bracts firmly appressed, purple, or green. Flowers 6–15 in an open umbel. Bracteoles are filiform, shortly patently hairy and with a few scales especially towards the apex. Corolla is pinkish-orange in color.

#### Habitat and distribution:

Growing in the Mt. Apo summit area scrubland, on open and exposed slopes and ridges. Endemic to Mindanao Island, Philippines

### **Conservation status:**

Not Assessed

### Synonyms:

N/A









References:
DENR Administrative Order. 2017.
Updated national list of threatened
Philippine plants and their
categories. DAO 2017-11

# Rhododendron jasminiflorum Hook. ERICACEAE

### Diagnostic characters:

A small shrub with elliptic to lance-shaped dark green leaves in whorls. The flowers are trumpet-shaped and pinkish white in color.

### Habitat and distribution:

Growing near and around Mt. Apo summit area scrubland, on open and exposed slopes together with other Ericaceae species. Distributed from Peninsular Malaysia, Sumatra, and Borneo to the Philippines.

### **Conservation status:**

Vulnerable (DAO 2017-11)

### Synonyms:

Azalea jasminiflora (Hook.) Kuntze





# Rhododendron javanicum (Blume) Benn. ERICACEAE

### Diagnostic characters:

An epiphytic shrub with distinctly bright orange to red flowers. The leaves are glabrous, elliptic, entire, and with an acute apex. The flowers are numerous, large, and 5-petalled.

### Habitat and distribution:

Growing abundantly up above tree branches in the mossy-montane forests. Widely distributed in Peninsular Malaysia, Greater Sunda Islands, Lesser Sunda Islands, and the Philippines

### **Conservation status:**

Critically Endangered (DAO 2017-11)

### Synonyms:

Vireya javanica Blume



### References:

DENR Administrative Order. 2017. Updated national list of threatened Philippine plants and their categories. DAO 2017-1

### Rhododendron mindanaense Merr. ERICACEAE

### Diagnostic characters:

Terrestrial shrub or tree up to 10 meters tall. The petiole is purplish-red and the leaf blade is green, simple, obovate to elliptic, and entire. The apex is rounded or obtuse while the base is tapered. The inflorescence is an open umbel with white, half-hanging flowers which are fragrant.

### Habitat and distribution:

Found growing in the thickets of Mt. Apo summit area, on open and exposed slopes and ridges. Endemic to the island of Mindanao in the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

N/A









### Rhododendron quadrasianum S.Vidal ERICACEAE

### Diagnostic characters:

A small shrub. The leaves are arranged in pseudowhorls. The leaf blade is simple, obovate, entire, apex rounded to obtuse. The flowers are reddish. The corolla tube and pedicel are both shortly hairy.

### Habitat and distribution:

Growing abundantly in the rocky, scrubland area of Mt. Apo summit together with several Vaccinium species. Native to the Philippines and distributed in most major islands. Also recorded from Sulawesi.

#### Conservation status:

Not Assessed

### Synonyms:

N/A





### Rhynchotechum discolor (Maxim.) B.L.Burtt GESNERIACEAE

### Diagnostic characters:

Herbaceous subshrubs reaching up to 50 cm tall. Leaves alternate, chartaceous, apex acuminate to acute, base narrowly cuneate with denticulate to serrate margin. Inflorescence axillary, dichasial cymes, calyx narrowly campanulate, 5-lobed, having white flowers. Fruits in the form of berry, also white in color.

### Habitat and distribution:

Growing in primary and secondary forests, sometimes in thickets, swamps, and along trail sides, typically in moist and shady conditions, on clay to silt and sand, often on steep slopes, at 20–2000 m. Distributed in South to Papua New Guinea, China, Taiwan, Japan, and throughout the Philippines.



### **Conservation status:**

Least Concern (Anderson & Middleton 2013)

### Synonyms:

Isanthera crenata C.B.Clarke, Isanthera dimorpha Kraenzl., Isanthera discolor Maxim., Rhynchotechum discolor var. incisum (Ohwi) E.Walker, Rhynchotechum tenue C.B.Clarke

### References:

Anderson, B. M., & Middleton, D. J. (2013). A Revision of Rhynchotechum Blume (Gesneriaceae). Edinburgh Journal of Botany, 70(1), 121–176. https://doi.org/10.1017/s0960428612000376

Iwatsuki, K. (1993a). Flora of Japan.





References:

### Rubus moluccanus L. ROSACEAE

### Diagnostic characters:

A creeping shrub with prickles on the hairy stem as well as on the lower side of leaves, at the veins. The leaf is cordate to 3-lobed, the margin is serrated, the upper leaf side is green while the lower side is brownish. The flowers are white which turn into bright-red fruits.

### Habitat and distribution:

Growing and creeping on other plants at the montane forest. Common throughout the Philippines even on lower elevation forests. With a wide distributional range from India and Sri Lanka to Eastern and South Australia and New Caledonia.

Conservation status:

Not Assessed

Synonyms: N/A



# Sarcandra glabra (Thunb.) Nakai CHLORANTHACEAE

### Diagnostic characters:

Small glabrous shrub. The leaves are simple, opposite, narrowly elliptic, deeply serrated, apex acute to acuminate. The inflorescences are terminal compound racemes. The fruits are rounded, bright-red when mature.

### Habitat and distribution:

Very common on the mossy and montane forests. Grows abundantly on both exposed and shaded parts of the forest. Found from India to China and in the Korean Peninsula, Japan, Taiwan, the Philippines, Sumatra, Borneo, Java, Lesser Sunda Islands, and New Guinea. Widely distributed throughout the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Chloranthus glaber (Thunb.) Makino, Ardisia glabra (Thunb.) A.DC., Bladhia glabra Thunb.







### Sarcopyramis bodinieri H.Lév. MELASTOMATACEAE

### Diagnostic characters:

A small herbaceous plant with quadrangulate stems. The leaves are tiny ovate-elliptic, with long, somewhat fleshy hairs. The flowers are solitary and terminal, 4-pellated and purplishpink. The hypanthium is also characteristically quadrangulate.

### Habitat and distribution:

Growing on the forest floor as colony right beside buttresses in the shaded part of the mossymontane forests with populations growing on shaded slopes.

Distributed from South East Tibet to South China, Taiwan, and the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Sarcopyramis bodinieri var. delicata (C.B.Rob.) C.Chen, Sarcopyramis crenata H.L.Li, Sarcopyramis delicata C.B.Rob., Sarcopyramis napalensis var. delicata (C.B.Rob.) S.F.Huang & T.C.Huang, Sarcopyramis parvifolia Merr. ex H.L.Li





### Scaevola oppositifolia Roxb. GOODENIACEAE

### Diagnostic characters:

A shrub or vine rarely erect. Leaves opposite, ovate to ovatelanceolate, apex acuminate, and base acute. Inflorescences axillary, often 2 in one leaf-axil. Flowers densely pubescent, yellow. Fruits fleshy, black when ripe.

### Habitat and distribution:

Mostly in rather open sites such as along forest edges, road and river sides, in shrubberies and secondary vegetation, rarely in forest. Occurs in Australia, Moluccas, New Guinea, Sulawesi, and Philippines. Found in the island of Mindoro, Negros, and Mindanao.

#### Conservation status:

Not Assessed

### Synonyms:

Lobelia oppositifolia Kuntze, Scaevola acuminatissima Merr., Scaevola amboinensis Miq., Scaevola corsoniana G.Don, Scaevola dajoensis Merr., Scaevola forbesii K.Krause, Scaevola lauterbachiana K.Krause, Sc aevola merrilliana K.Krause, Scaevola minahassae Koord., Scaevola mindorensis Merr., Scaevola novoguineensis K.Schum., Scaevola similis Hemsl., Scaevola wollastonii Wernham



### References:

Flora Malesiana, ser. 1, 5 (1957), 342.

Howarth, D. G., Hellström, M., Baum, D. A., & Motley, T. J. (2003). Phylogenetics of the genus Scaevola (Goodeniaceae): implication for dispersal patterns across the Pacific Basin and colonization of the Hawaiian Islands. American Journal of Botany, 90(6), 915–923. https://doi.org/10.3732/ajb.90.6.915

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

### Tasmannia piperita (Hook.f.) Miers WINTERACEAE

### Diagnostic characters:

A shrub reaching 1m high or tree up to 12 m tall. Leaves are simple, alternately, or spirally arranged. Young leaves are usually reddish, including young stems and petioles. The leaves are, even when dry, extremely aromatic, hot, and peppery to the taste. Spicy foliage that is glabrous, shiny, and dark green above and whitish below. Flowers in short fascicles, 1–3 flower, sometimes 5, usually unisexual to well-stalked solitary flowers. Fruit is globular to bluntellipsoid, pale green, ripening red then purplish-black.

### Habitat and distribution:

Very common plant of the mossy-montane forests, growing abundantly with Leptospermum amboinense in the higher elevation forests before the scrubland. Distributed throughout the Philipines and in Borneo, Sulawesi, Moluccas, Lesser Sunda Islands, New Guinea, and Solomon Islands.

### **Conservation status:**

Not assessed in the Philippines but considered as Critically Endangered species of Mt. Jaya, New Guinea

#### Synonyms:

Drimys angiensis Kaneh. & Hatus., Drimys buxifolia Ridl., Drimys piperita Hook.f., Drimys piperita var. apetala Kink., Drimys piperita var. membranea Kink., Drimys piperita var. xerophylla Kink., Drimys reducta Diels, Drimys versteegii Diels, Tasmannia buxifolia (Ridl.) A.C.Sm.







### Trichoglottis latisepala Ames ORCHIDACEAE

### Diagnostic characters:

An epiphytic orchid with pendulous growth with stems reaching up to 1m long. Leaves linear in shape, coriaceous, turning purple when exposed to bright light or strong sunlight. Flowers borne in short inflorescences, multiple, each arising opposite a leaf and bearing 2 – 6 pink to purple flowers. The lateral sepals are shaped like the wing of a bird, lobes rounded. Labellum 3-lobed.

### Habitat and distribution:

Grows in coastal and lowland forests up to 1000m. Endemic to the Philippines.

### **Conservation status:**

Not Assessed

### Synonyms:

Trichoglottis latisepala var. tricarinata T.Hashim.



### References:

Ames O. (1909). Notes on Philippine Orchids with Descriptions of New Species, II. Philippine Journal of Science 4c, 663-676.

Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org

Teoh, E. S. (2022). Orchid Species from Himalaya and Southeast Asia Vol. 3 (R - Z). Switzerland: Springer International Publishing. Page 91

### Vaccinium microphyllum Reinw. ex Blume ERICACEAE

### Diagnostic characters:

A creeping, dwarfed and rigid shrub, mostly in rock crevices. The stiff branchlets reaching 23 cm, in length. The small spreading leaves have a short stalk 2 mm. or less in length, and a blade of very uniform shape, 10-12 mm. long by 3.5-5 broad. The pedicel is 6 mm. long, and articulated with the ovary. The broad spreading calyx lobes bear at their tips a tuft of short hairs. The bright crimson corolla is 6 mm. long, 3 mm. across the mouth, and 5 across the inflated lower portion. The stamens, including the anther (1.5 mm) are 4 mm. long; the style and stigma are also 4 mm. The style becomes suddenly inflated above the base, assuming a linear-oblong shape.

### Habitat and distribution:

Growing as epiphyte in the mossy forest and as shrub in the rocky scrubland of the Mt. Apo summit area, where it is common. Distributed in the Philippines, Moluccas, and Vanuatu.

### Conservation status:

Not Assessed

### Synonyms:

Gaultheria blumei F.Muell., Vaccinium mindorense Rendle











References:

### Vaccinium myrtoides (Blume) Miq

### Diagnostic characters:

Shrub or small tree, up to 2 m tall. Leaves are ovate to elliptic, often subimbricately arranged, entire, petiole up to 1.5 mm long. Racemes laxly 4–12-flowered. Berry globose, 4–5 mm in diameter, blue–black, glabrous. Flowers and fruits year-round.

### Habitat and distribution:

Same with V. microphyllum as they are found growing epiphytic in the closed canopy forest and as shrub in the open scrubland of the summit area of Mt. Apo. Grows abundantly in the summit area thickets with other species of Vaccinium and Rhododendron. Found in Sumatra, the Philippines, and Moluccas.

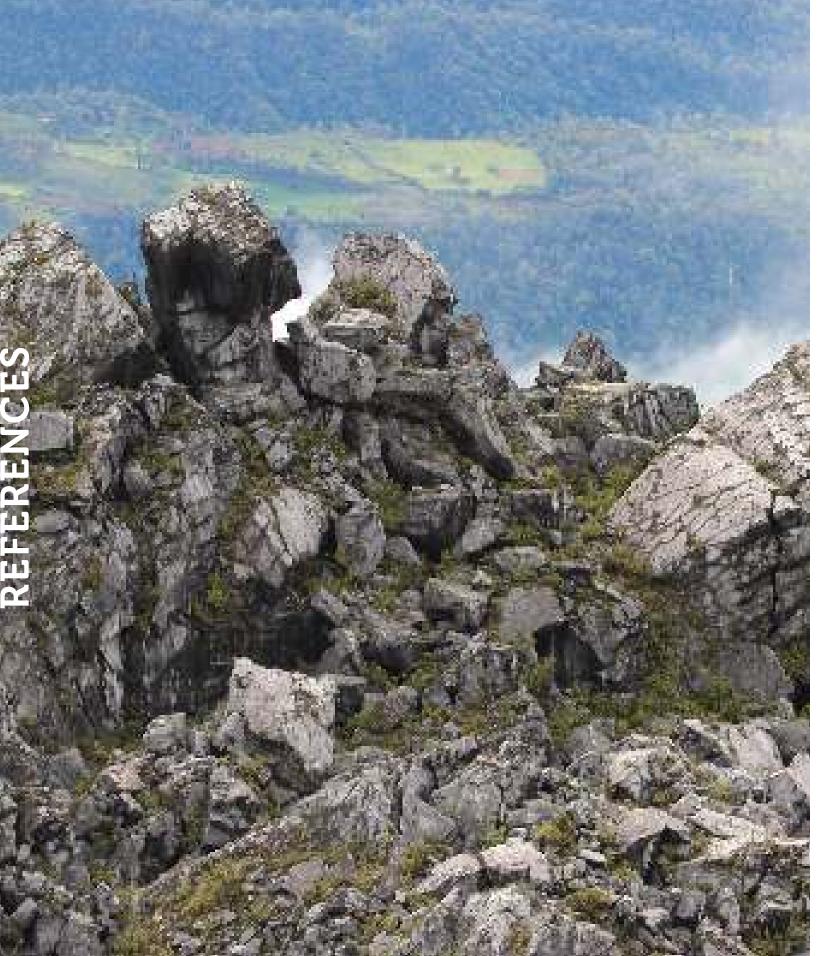
### Conservation status:

Not Assessed

### Synonyms:

Agapetes myrtoides (Blume) G.Don, Epigynium myrtoides (Blume) Klotzsch, Thibaudia myrtoides Blume, Vaccinium villarii S.Vidal





Pelser, P.B., Barcelona, J.F. & Nickrent, D.L. (eds.) (2011 onwards). *Co's Digital Flora of the Philippines*. Available from: https://www.philippineplants.org

Board of Trustees of the Royal Botanic Gardens, Kew. (2022).

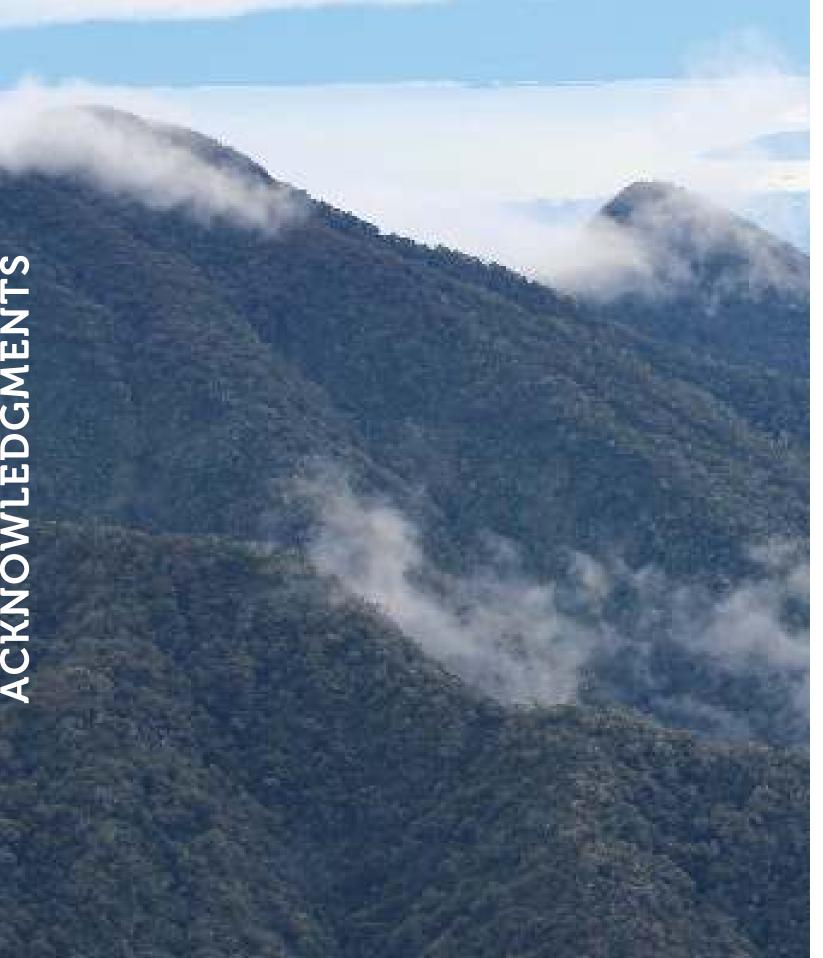
Plants of the World Online. Available from https://powo.science.kew.
org/

DENR Administrative Order (2017.) Updated national list of threatened Philippine plants and their categories. DAO 2017-11. Available from: https://www.philippineplants.org/dao-2017-11.pdf

Copeland, H.F. (1930). Philippine Ericaceae, II: the species of Vaccinium. *Philippine Journal of Science*. 42:537–607

Sleumer H. (1966–1967). Ericaceae: In: Van Steenis CGGJ, editor. Flora Malesiana, Series 1: Spermatophyta (Seed Plants), vol. 6, parts 4 and 5. Groningen: Wolters-Noordhoff. pp. 469–914.

Royal Botanic Garden Edinburgh (n.d.) Edinburgh Rhododendron Monographs. Available from:https://data.rbge.org.uk/ service/factsheets/Edinburgh\_Rhododendron\_Monographs.xhtm



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We acknowledge the Department of Environment and Natural Resources (DENR), Provincial Environment and Natural Resources Office (PENRO) of Davao del Sur and Protected Area Management Office of Mount Apo Natural Park (PAMO- MANP) for their support and assistance.



### Catherine C. Enriquez

It exero tem sust am, sam vendus non plam exerum qui tem sundis ut eum atinciumquas voluptus et apis repudae eos santi sit, tore volorum rendiam etumquatia dolor sequi cus, voluptur, suntem quae eosse voluptae nonsercil etur, secusaeri de essimust plit labore, ex et poribuscid qui dit plabo. Harchic ipitem enditiis doloreh endion cupti ut re.

### Mc Andrew K. Pranada

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### John Rey C. Callado

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### Danilo N. Tandang

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### Dr. Victor B. Amoroso

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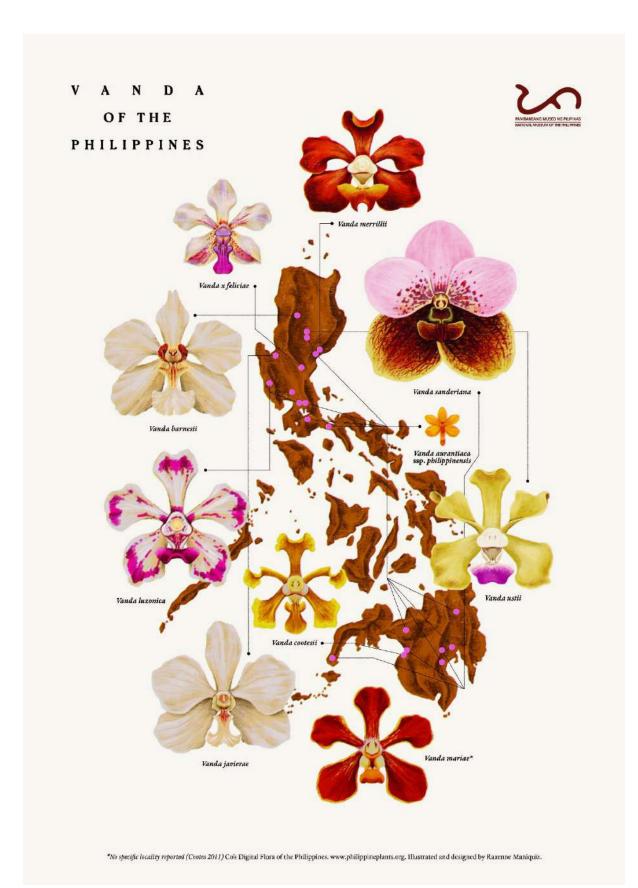
# THE NATIONAL MUSEUM OF THE PHILIPPINES

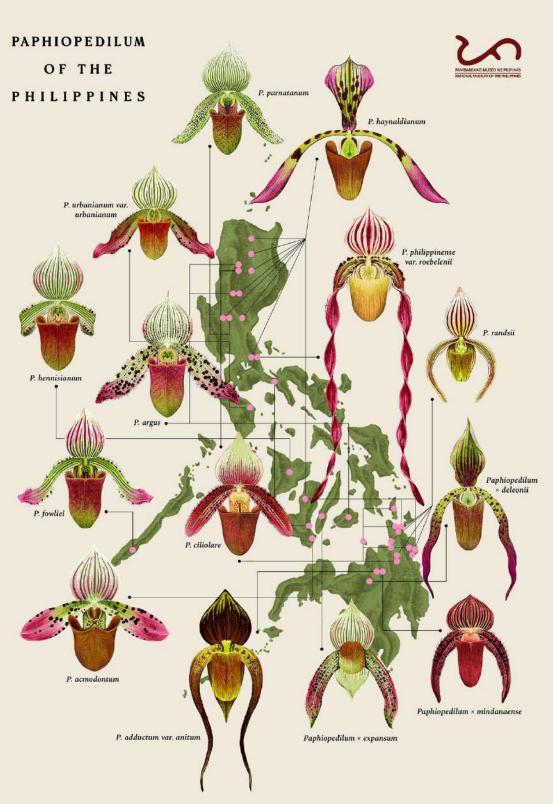
The National Museum of the Philippines, a trust of the national government of the Republic of the Philippines, is an educational, scientific, and cultural institution that acquires, documents, preserves, exhibits, and fosters scholarly study and public appreciation of works of art, specimens, and cultural and historical artifacts which are representative and unique to the cultural heritage of the Filipino people and the natural history of the Philippines. Moreover, it is mandated to establish, manage, and develop museums comprising the National Museum Complex in Manila, as well as regional, area and site museums in key locations around the country.

The Museum manages and develops the national reference collections in the areas of cultural heritage (fine arts, architectural arts, ethnology, archaeology, and maritime and underwater cultural heritage) and natural history (botany, zoology, and geology and paleontology), carrying out permanent research programs in biodiversity, geological history, human origins, pre-historical and historical archaeology, intangible heritage, art history, and moveable and immoveable heritage. Appreciation of the collections and research findings of the Museum, as well as technical skills and knowledge, are disseminated through exhibitions, publications, educational training, outreach, technical assistance, and other public programs.

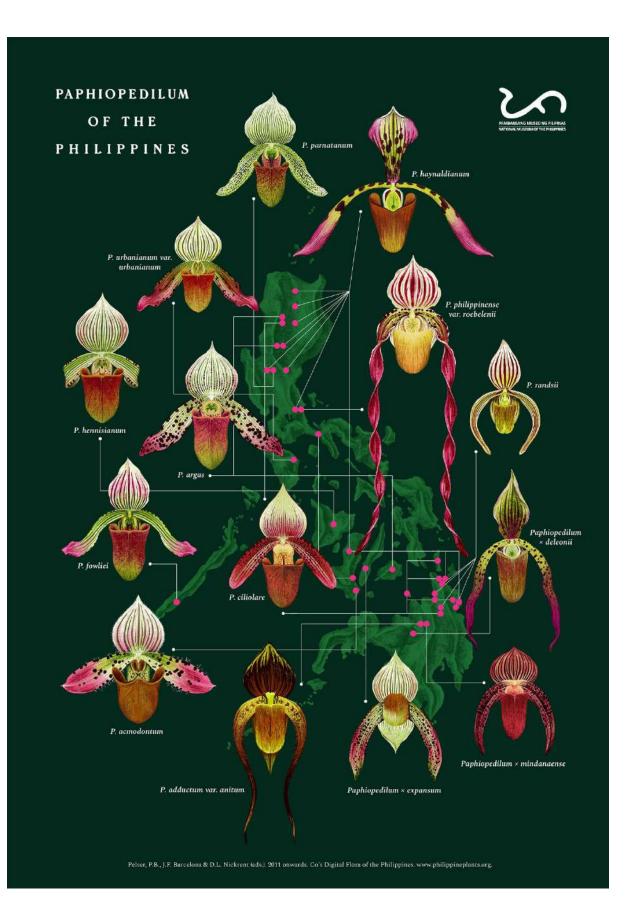


### **POSTER**

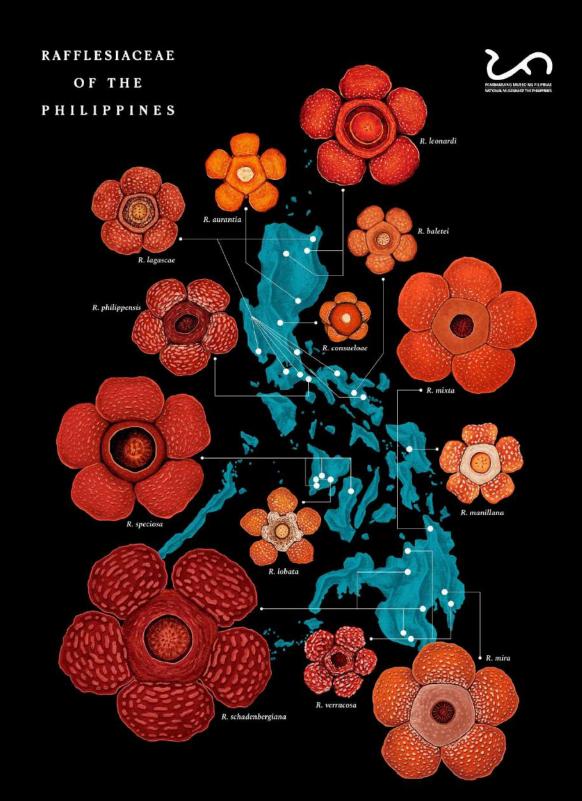




Pelser, P.B., J.F. Barcelona & D.L. Nickrent (eds.). 2011 onwards. Co's Digital Flora of the Philippines. www.philippineplants.org.

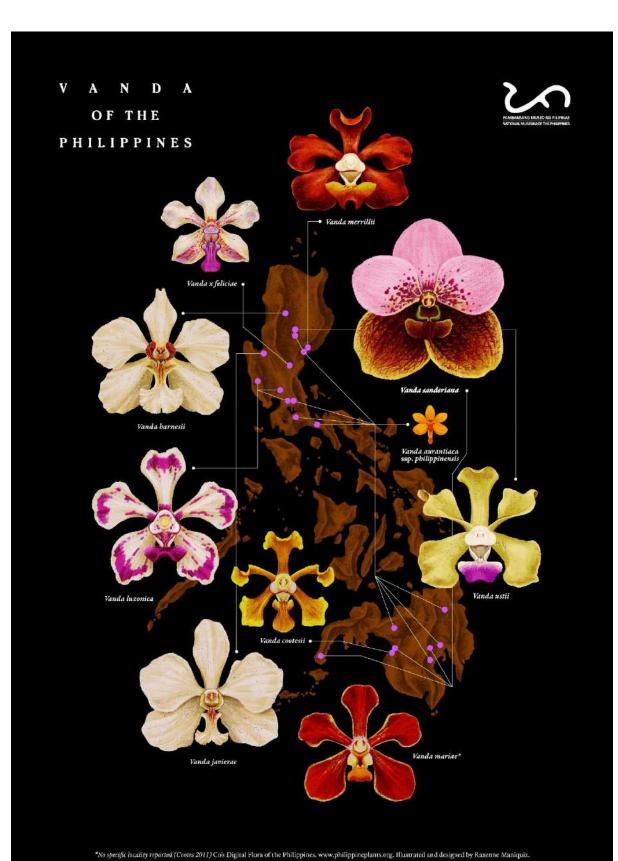




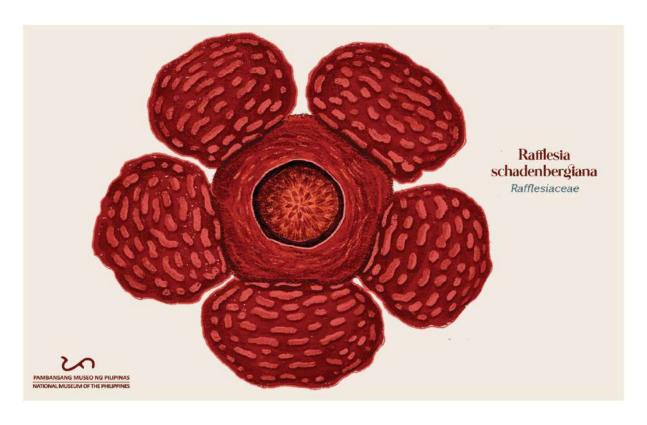


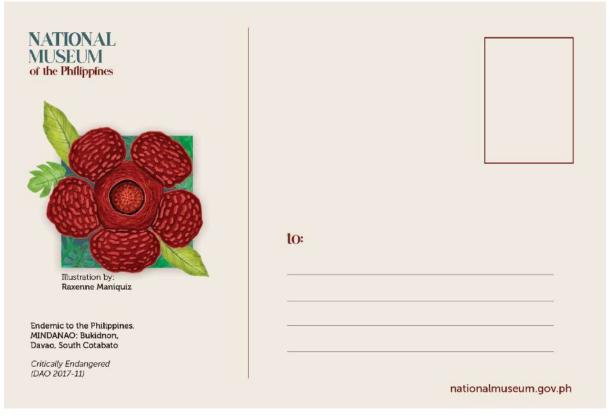






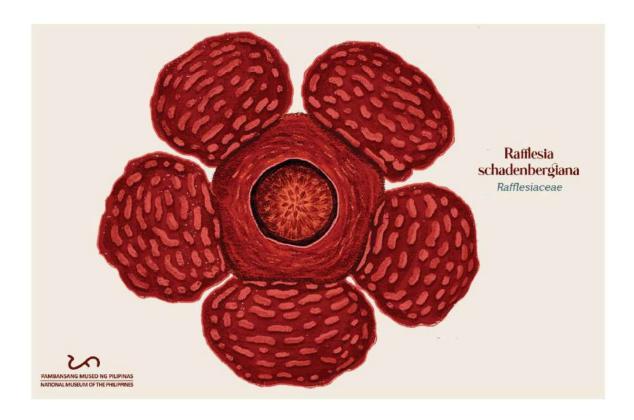
### **POSTCARD**

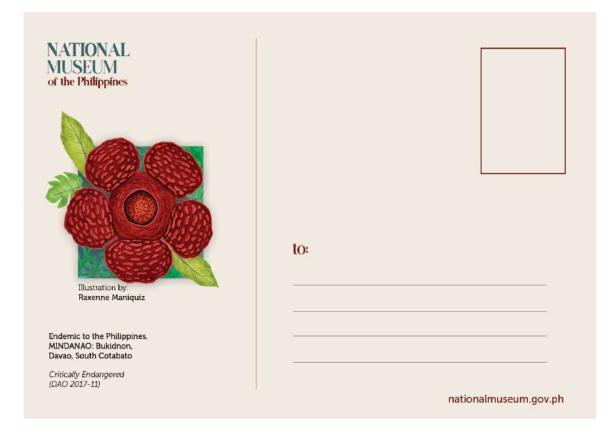




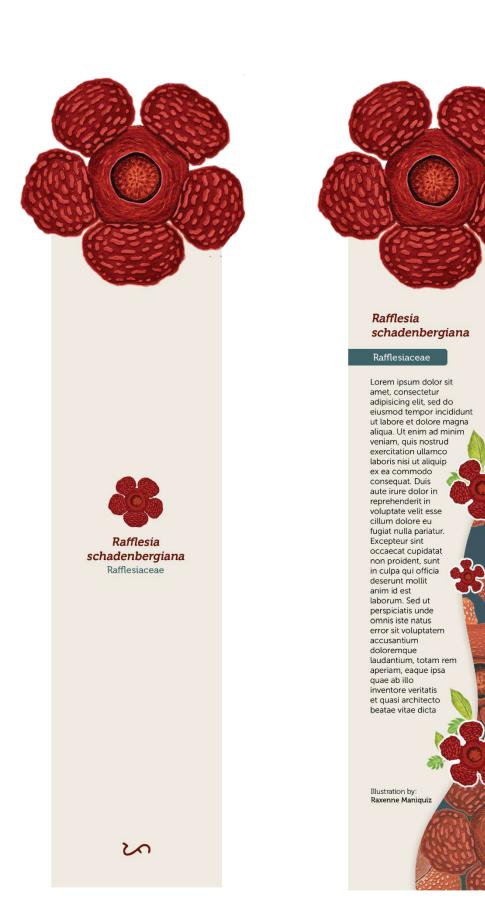


Rafflesia	schadenbergiana		
		nationalmuseum.gov.ph	
	Endemic to the Philippines. MINDANAO: Bukidnon, Davao, South Cotabato  Critically Endangered (DAO 2017-11)  Illustration by: Raxenne Maniquiz		





### **BOOKMARK**



### Rafflesia schadenbergiana Rafflesiaceae



# Rafflesia Schadenbergiana

### Rafflesiaceae

Family

Occurs as a large sized, hot to cool growing terrestrial, lithophytic and rarely epiphytic species with 6 ligulate or narrowly elliptic, clear dull green leaves.

Found in the Philippines on limestone hills and serpentine cliffs from sealevel to 1500 meters as a large sized, hot to cool growing terrestrial, lithophytic and rarely epiphytic species with 6, ligulate or narrowly elliptic, clear dull green leaves that blooms in the late winter through spring on an erect, pubescent, 1 1/2' [45 cm] long, successively opening, several [3 to 6] flowered inflorescence with oblong-lanceolate floral bracts and held well above the leaves.



Illustration by: Raxenne Maniquiz

Endemic to the Philippines. MINDANAO: Bukidnon, Davao, South Cotabato

Critically Endangered (DAO 2017-11)





Rafflesia schadenbergiana

Rafflesiaceae



### Rafflesia schadenbergiana

### Rafflesiaceae

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