Candidates for neotypification of Blanco's names of Philippine plants: specimens in the U.S. National Herbarium

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Summary

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Evidence suggests that of the widely distributed sets of E. D. Merrill's "illustrative specimens" for F. M. Blanco's names of Philippine plants, the first, most complete, and best labelled extant set is the one at the U.S. National Herbarium. Workers considering neotypification of Blanco's plant names should give special consideration to the materials at US.

Keywords: Blanco, Merrill, Philippine plants, U.S. National Herbarium.

Introduction

Merrill, in his *Species Blancoanae* (1918), long before botanists thought of the term "neotype", distributed 16 sets of "illustrative specimens" to document taxa published in the three editions of Blanco's *Flora de Filipinas* (1837, 1845, 1877-1883) for which no original material is extant. Steven Smith, a herbarium assistant at US who was checking recent literature, turned in a number of "isoneotypes" to the second author who was incorporating them in the type collection and its records. The first author was consulted and noticed, from the US National Herbarium numbers, that there seemed to be a lot of these specimens, which was soon documented from the old handwritten Herbarium Register. The second author was encouraged to track the original correspondence from the Registrar's records and this paper reports the results.

Documentation

F. M. Blanco (1778–1845), an Augustinian friar stationed in the Philippines from 1805 to his death, published his *Flora de Filipinas* in 1837, followed by a second edition in 1845. F. A. Llanos (1806–1881) & F. A. Naves (1839–1910) published a third edition in 1877–1883. Original material of Blanco's names of new taxa in these publications did not survive, according to E. D. Merrill (1918: 31) who said: "It is a well-known fact that Blanco did not permanently preserve botanical material, although it seems probable that he did preserve temporarily some specimens, which in the course of time were destroyed, as their value was not realised. Most of his descriptions were based on fresh material collected by himself or brought to him by other persons; but some descriptions were based on dried specimens received from his various colleagues, notably from Azaola, and later from Llanos".

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Following the Spanish-American War (1895–1898) the Philippine Islands were ceded to the United States. E. D. Merrill arrived in 1902 and began an intensive collecting program and important publications on Philippine plants. Merrill (1918) published his major commentary on all of Blanco's species. With few exceptions, Merrill cited what he called an "illustrative specimen" for each of Blanco's names. Those for names of new taxa functioned as replacements for the lost original material. In his introduction, Merrill (1918: 36) wrote:

"In 1912 it occurred to me that, as Blanco preserved no botanical material, the preparation of an exsiccata to consist of specimens that should represent the various species described by him, as these were understood by me after long experience in the field and a critical study of each individual description, would be very desirable. It was realized that the distribution of such an *exsiccata* to the larger botanical institutions would do much to fix the status of Blanco's species, provided the work of selection was critically done. ...In other words a critically prepared *exsiccata* would supply a fairly dependable series of specimens that to a large degree would take the place of Blanco's 'types' which were never preserved".

Merrill sent the first set of this specially prepared "flora exsiccata" to the United States National Herbarium. Under the U. S. National Museum Accession no. 60762 is Merrill's letter dated 8 December 1916 to W. R. Maxon, Associate Curator. Merrill said: "I am sending you under frank today two packages containing the supplementary material of my exsiccata "Species Blancoanae" up to No. 1046. This includes a representative of each specimen that has been prepared to date, and is the only set of this important series that has been distributed. Fourteen sets of duplicates are still available for distribution". The letter continued, Merrill firmly insisting that associated data remain attached to the specimens:

"If possible I wish that you would have the set now in Washington mounted and arranged numerically. When this matter was discussed with you at the time I was in Washington you expressed serious objection to attaching to the sheets the numerous data with most of the numbers [i.e., specimens]. It is absolutely necessary that the data with the set in Washington be attached to the specimen[s] at least until the publication which I expect to issue in connection with this exsiccata be printed for [i.e., because] all original data is with the first 900 numbers that you have and in some cases I cannot connect my manuscript with certain numbers without reference to the data accompanying the specimens that are in Washington.

I was rather strongly impressed with one phase of the botanical work in Washington which has a direct bearing on the matter under discussion. I left Washington with a very strong impression that in the National Herbarium in preparing mounted specimens utility was sacrificed to neatness. I will admit that if all the data, field notes, copies of discussions of the individual species and bibliographical references be attached to the mounted sheets of the material of my exsiccata that you now have, the prepared specimens will not present a particularly neat appearance, yet the addition of this data makes the mounted sheets immensely more valuable for purposes of consultation than corresponding specimens without such data.

In this herbarium it is customary to attach to the mounted sheets all original data in its original form, those specimens which are made the types of new species or

those which are made the subject of discussion in print are supplied with a carbon copy of the original descriptions and discussions. In many cases this carbon copy is removed and a printed copy substituted as soon as the data appears in print.

In case you do not feel that the data supplied with the first 900 numbers of the Species Blancoanae can be preserved with the specimens, then please do not have this material mounted for it will be necessary to have this set returned to Manila and replaced by a set of duplicates without anything but the number".

On 23 January 1917, Maxon replied: "Your letter of December 8th was received 10 days ago and the two packages referred to are now at hand. In accordance with your wishes, the entire set of the "species Blancoanae", numbering 1046 specimens, is accessioned as exchange from the [Philippine] Bureau of Science and the specimens are being mounted in the way you have suggested; that is, all data appearing with the specimens are being attached to the sheets. The substitution of proof sheets for some of the carbon copies of the original descriptions and discussions is a matter which can be taken up later. The principal concern at present is to have the set mounted as promptly as feasible and have the specimens arranged numerically, so that a given number will be immediately accessible./ It is hardly necessary for me to say that we are extremely glad to have the first set of the valuable Exsiccatae and that I shall be glad to be of such assistance as I can to you."

US set

The *Species Blancoanae* entries in pertinent departmental museum catalogues (ledgers), now in the basement of the National Museum of Natural History, are in four blocks and usually sequential but occasionally jumbled. The US set runs from 1–1062, equivalent to the 1060 attributed to PNH by Lanjouw & Stafleu (1954: 78) under "Blancoanae, Plantae (ed. Merrill)". The same number was also cited by Steenis-Kruseman (in Steenis 1950: 61) "The collection comprised 1060 *nos* in 16900 duplicates, in *Herb. Manila*".

The ledgers have seven columns for each specimen: 1, Herbarium [sheet] number: 25 to a page; 2, Package number: an internal number pertinent to an entire lot; 3, Name: left blank except for ferns but now filled in by the 1st author; 4, Locality: "Philippine Islands" written only at the top of each page; 5, Collector: "Species Blancoanae" written at the top of each page; 6, Collector's number: the "Species Blancoanae" number assigned by Merrill; and 7, Remarks: blank but now filled in by first author commenting on the presence, if any, of a field label and/or text label.

There are four blocks of *Species Blancoanae* specimens. The main block is in ledger 184, marked "Philippines", pp. 146–184. The cited package number in the ledger, 11572, matches the catalogue number on the Registrar accession 60762. There are entries for mounted sheets numbered US 903676–904723 (1048 numbers) which are in the *Species Blancoanae* number sequence (1–1048) except for the occasional jumbles, e.g., *Species Blancoanae* nos. 1–8 are not on p. 146 but are on p. 149 (US sheet numbers 903768–903775).

The second block of *Species Blancoanae* entries are in ledger 171, marked "Wyoming & Colorado", on pp. 94–96. The entries pertain to US 837348–837376 (29 numbers) and run, with many gaps, from *Species Blancoanae* 913–975, apparently adding second sheets for these species. The package number is 11572.

The third block of *Species Blancoanae* entries are in ledger 178, marked "Idaho, & Montana", on p. 192. The entries pertain to US 874770–874788 (19 numbers) and, more or less, run from *Species Blancoanae* 1047 to 1058. It includes 3 numbers that are Merrill's personal collections (not *Species Blancoanae*) and repeats several *Species Blancoanae* numbers supposedly accounted for in the main block: 61, 1027, 1038, and 1045, presumably adding second sheets. The package number is 11712.

The fourth and smallest block of *Species Blancoanae* entries are in ledger 162, marked "West Indies", on pp. 187–188. The entries are for US 794675–794678 (4 numbers) and pertain to *Species Blancoanae* nos. 1059–1062. The package number is 11901.

Specimen appearance

The data often attached to the sheets of Merrill's exsiccata of *Species Blancoanae* make these easily identified in the US general herbarium (Fig. 1): (1) if present, a collector's field label or notes is glued to the upper left-hand margin of the specimen; (2) if present, a text label: yellow or white typewritten page, often folded, with the discussion identical to, or clearly a precursor of the published text in *Species Blancoanae*, is pinned to the upper right-hand side; and (3) the specimen label, glued in the lower right-hand corner, only stencilled, "Merrill:/ Species Blancoanae No.", followed by a number stamped in blue ink, and Merrill's identification of the specimen in, what we have become convinced is, the hand of W. R. Maxon. The blue ink stamp with the "Sp. Blancoanae" number also was used on the text sheet and the field label, linking them.

Merrill (1916: 667) described the practice and importance of the field labels:

"The notes with the specimens represent the combined field observations of perhaps 100 different American and Filipino collectors, and the botanist working with this material has at once available a great mass of information that is not to be found at all in the average herbarium, and information that no single collector could possibly secure in any reasonable time".

It has been assumed that an original set was kept in Manila, at what came to be known as the Philippine National Herbarium. The Merrill correspondence cited above indicates that the US set was what he was relying on. In any case, the PNH herbarium was destroyed in World War II (Schultes 1957: 92), and it appears that the US set of *Species Blancoanae*, at least because it is the first set of duplicates distributed by Merrill, probably has more of the precious field labels than any other extant set. Despite the correspondence between Merrill and Maxon cited above, not all *Species Blancoanae* specimens at US have the field label, let alone the typewritten draft of the published treatment. Roughly speaking, the US specimens of *Species Blancoanae* 1–900 usually have both the field label and text label but sometimes only the text label; 901–974 usually have only the text label but sometimes also the field label or neither; and 975–1062 usually have neither field nor text label.

Multiple illustrative specimens exist in some cases, such as for combretaceous *Bucida comitana* Blanco [=*Terminalia comitana* (Blanco) Merr.], involving *Species Blancoanae* 757, 780, and *918*. Only one specimen has all the original data, *757*

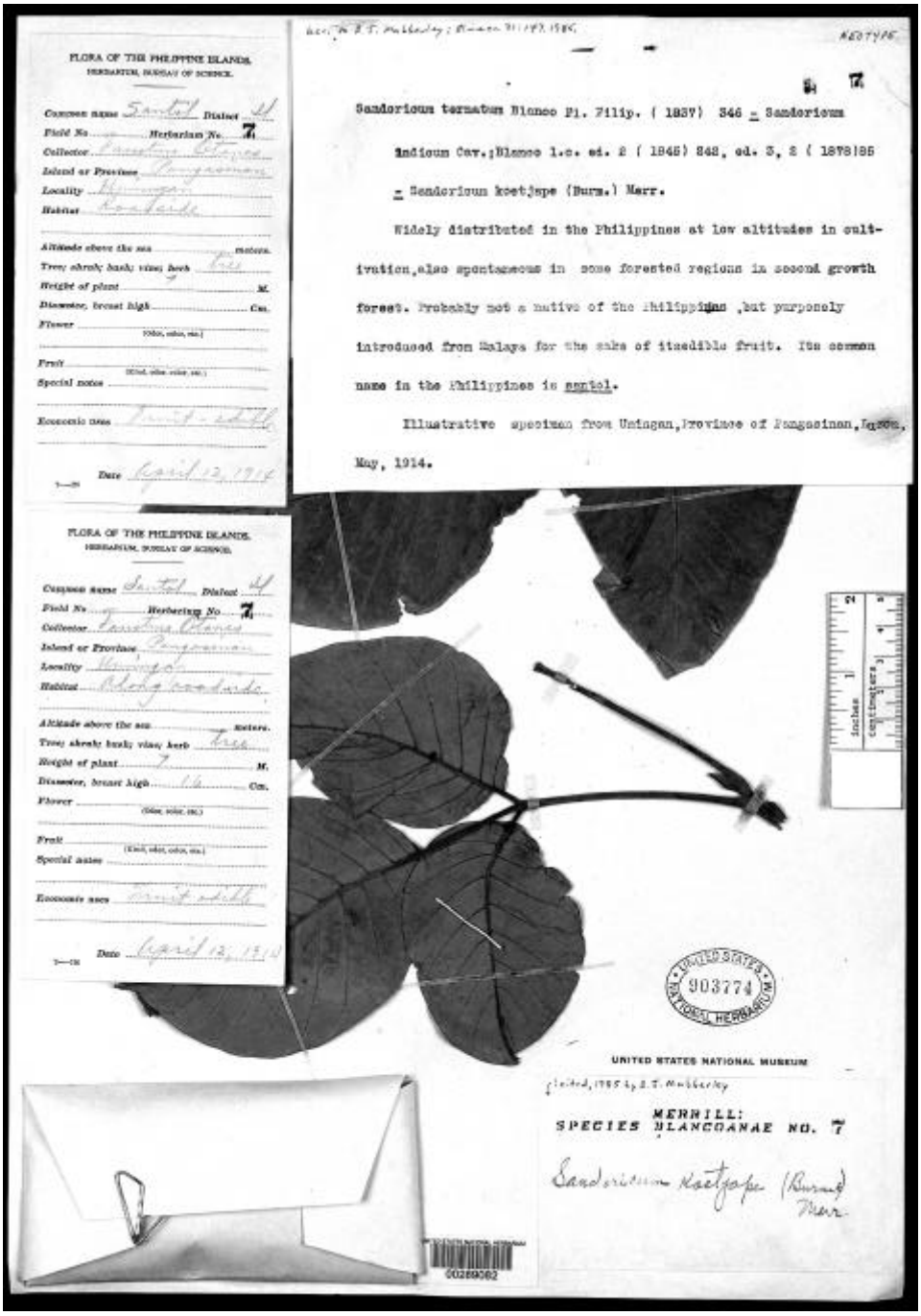

Fig. 1. Representative US specimen (903774) with the important field label (upper left: glued on one edge), the text label (upper right; pinned on) and the usual specimen label (lower right, glued on two edges) with handwriting of W. R. Maxon. This specimen is here designated as the neotype of *Sandoricum ternatum* Blanco (1837: 346).

(US 904436). Its field label (at upper left) says that Ramos collected it on 6 Dec 1914 in Bulacan Province from a tree, 50 m tall with dbh of 100 cm, that was called "naghubo". The text label (upper right) cites only one illustrative specimen "from Angat, Province of Bulacan, December 1914." The second specimen, *780* (US 904459), has the original field label at the upper left, stating that it was collected by Ramos on 5 Feb 1915 in Batangas Province with the Tagalog name "dinglas", etc. and the specimen label (at lower right) but no text label in upper right. The third specimen, *918* (US 837352), has no supplementary data (only the specimen label at lower right) but has fruits, while the other two specimens appear to be sterile.

Neotypifications

Many botanists realised the value of Merrill's work and have neotypified many of Blanco's names based on collections cited in Merrill's *Species Blancoanae*. Philcox (1968:18, 2nd footnote) gave a thoughtful statement: "It is generally accepted that Blanco and Llanos preserved no specimens of the plants on which they based their names. The original descriptions have been closely studied by Merrill (1918) and for the species involved in this revision I have no hesitation in choosing as neotypes the illustrative specimens from Merrill's series–'Species Blancoanae'".

This is true for Blanco but it may not be true for Llanos, as noted by Veldkamp (1989). He found that there is no extant Blanco material but there is Llanos material at G, L, MA, and P (?) sent after 1853 or 1854. He concluded that "This is an important discovery...types for at least some of the new taxa proposed by Llanos are extant...." but not for Blanco's. For neotypifying Blanco's names he commented "Merrill's specimens ought to be preferred as they are spread over so many institutes and in better condition [than the Llanos specimens]".

Blanco neotypes or isoneotypes are cited in the literature from the following herbaria: A, B, BM, BO, CAL, F, GH, K, L, MO, NSW, NY, P, U, UC, US, and W. According to e-mail replies from collection managers from many of these herbaria, Merrill's exsiccata of *Species Blancoanae* can be readily identified by the specimen label stencilled, "Merrill: /Species Blancoanae No." in black ink followed by a number stamped in blue ink. Herbaria were expected to fill in the name appearing in Merrill's publication. Without the benefit of the original field label or the text label, institutions record the information as cited in Merrill's *Species Blancoanae* concerning the collector, specific collection date, and specific collection locality. Inconsistent results were obtained when querying several major type databases such as the combined Dutch Herbaria, Harvard, Missouri, and New York. The typification field for the same record appears variously as type, isotype, lectotype, neotype, isoneotype, neosyntype, syn-neotype. The collector is variously recorded as E. D. Merrill, Merrill Species Blancoanae, Merrill Sp. Blanc., Merrill Sp. Blanc. [+true collector], E.D. Merrill Species Blancoanae, Blanco, F.M. Blanco, Plantae Blancoanae, Collector unspecified on label, or no collector in the collector field. The citation fields are cited as "Fl. Filip." or "Sp. Blancoan."

Past neotypifications often are best understood as part of a two-step process under Art. 9.14 of the St. Louis (2000) Code: "A designation of a…neotype that…is…a single gathering but [of] more than one specimen must nevertheless be accepted…, but may be further narrowed to a single one by way of a subsequent…neo-

typification." In short, one could argue that Merrill, by publishing his "illustrative specimens" as *Species Blancoanae*, designated a single gathering. The final step might be taken by a subsequent author who designates one specimen in a particular herbarium. This position was taken by Mols & Kessler (2000: 219) who concluded that the type of *Uvaria tripetala* Blanco was "*Merrill Species Blancoanae 305* (holoneo[type] PNH†, designated by Merrill, 1918, isoneo- A, BM, K, L, P, US), Philippines, Luzon, Camarines Prov., fr." This is taking the position that Merrill (1918: 148) designated the neotype by listing "Species Blancoanae 305" as his "Illustrative specimen:" and, assuming that the first specimen was retained in Manila, has been lost. This is dubious, given the fact that the Merrill correspondence documented above was so insistent about the label information being maintained at US, without which he could not keep track of his records. This suggests that the US set is, in fact, the first set and all others, including those retained in Manila, were duplicates.

The U.S. National Herbarium has initiated a project to inventory all of Merrill's citations of Blanco's new taxa in *Species Blancoanae* so that the original field label data, if extant, are available to the scientific community. A website with some data is currently listed under the U.S. National Type Specimen Register (http://persoon.si.edu/types/). US records are edited to a standard form and might be a useful model for other institutions encountering Merrill's *Species Blancoanae* specimens. Blanco's *Flora Filipinas* citation is entered in the primary citation field and Merrill's *Species Blancoanae* citation is entered in the remarks field. If a neotypification has been found, then this citation is also entered in the remarks field. However, a website focused on the US Blanco material is planned, including a database and images.

The following example includes more original information from the field label than is normally captured. The point here is that the field label (apparently only at US) has valuable information not found in Merrill's publication, in this case showing that the "May 1914" collection date in the publication (and on the text label) is, in fact, an error for 14 April 1914 on the field label.

Meliaceae
Sandoricum ternatum F. M. Blanco [US] ISONEOTYPE
Fl. Filipinas: 346. 1837.
F. Otañes s.n.; Merr., Sp. Blancoanae 7.
12 Apr 1914 [erroneously cited by Merrill as: "May 1914"]
Philippines: Luzon I.: Pangasinan Prov.: Umingan, roadside. Tree to 7 m., dbh 16 cm, fr. edible. Common name: "Santol" (Ilocano). Neotypified by D. J. Mabberley in Blumea 31: 147. 1985 as "(PNH, lost, neo, 'representative [sic pro illustrative] specimen' of Merr , Spec. Blanc. (1918) 209; K, L)."
Identified as: *Sandoricum koetjape* (N. Burm.) Merr., teste Merrill, Sp. Blanc.: 209. 1918; also Mabberley in Blumea 31: 147. 1985. Catalog #: US 903774
Verification: specimen compared with original publication.

Surprisingly the specimen here cited (US 903774) and depicted (Fig. 1) has two copies of the field label! Botanists who choose to neotypify a Blanco name from a specimen cited in Merrill's *Species Blancoanae* as "illustrative specimen(s)" should

seriously consider designating a specimen from the US National Herbarium as the neotype, especially if it has the informative but rare field label in the upper left hand corner. We are uneasy about accepting Merrill's 1918 publication with its citation of "illustrative specimen(s)" as constituting effective neotypification on the PNH specimen. Therefore we regard Mabberley's action (1985: 147) as constituting the first effective neotypification on the destroyed PNH specimen. We here designate the US 903774 specimen as a neotype of *Sandoricum ternatum* Blanco (1837: 346) to replace the destroyed one designated by Mabberley.

Acknowledgements

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