

STUDIES IN THE THEACEAE, XXIX
FURTHER STUDIES IN THE GENUS MELCHIORA

CLARENCE E. KOBUSKI

With four plates

SINCE DESCRIBING THE GENUS *Melchiora* last year (Jour. Arnold Arb. 37: 153–159. 1956), added information and material has come to my attention. Isotypes of new taxa, at that time either unknown or unavailable to me, have been added to our herbaria. Although these added specimens help confirm some of my suggestions they are still far too few in number for positive conclusions. It will probably be some time before enough material has been assembled to show conclusively whether two, three or even more taxa should be recognized. At present, two species and three varieties are recorded for the genus.

Photographs of the isotypes deposited in our herbaria are reproduced at the end of this paper.

MELCHIORA MANNII (OLIVER) KOBUSKI

Melchiora mannii (Oliver) Kobuski in Jour. Arnold Arb. 37: 155. 1956.

Adinandra mannii Oliver, Fl. Trop. Africa 1: 170. 1868. (See Kobuski, loc. cit. for more complete citation of literature).

This taxon is an endemic found only at the summit of the Pico on the island of São Tomé off the west coast of Africa in the Gulf of Guinea. Last year in discussing this taxon I quoted Exell as stating that he had made a search for *M. mannii* in November 1932 on the Pico in a “tremendous” rainstorm without success. He suggested that since a part of the summit had been cleared and planted with *Cinchona* it was possible that this taxon may have become extinct. In my apprehension over the taxon I mentioned forebodingly several instances where other taxa of this family had become extinct within our own generation. It is pleasant to be able to relate now that such is not the case.

Last October I received a pleased and excited letter from Prof. Th. Monod, Director of the Institut Français d’Afrique Noire at Dakar, stating that he had collected this species on a collecting trip to São Tomé. His is only the third collection of this species as far as I know (*Mann* in 1861 and *Campos* in 1907 are the other two) and the three collections were made at approximately fifty-year intervals!

Later Prof. Monod sent an excellent photograph showing eight flowers enlarged to near natural size. With his kind permission this photograph is being included in this paper. It shows remarkably well the “non spreading” character of the corolla, a most unusual character of this genus, very different from the spreading corolla of other members of the family.

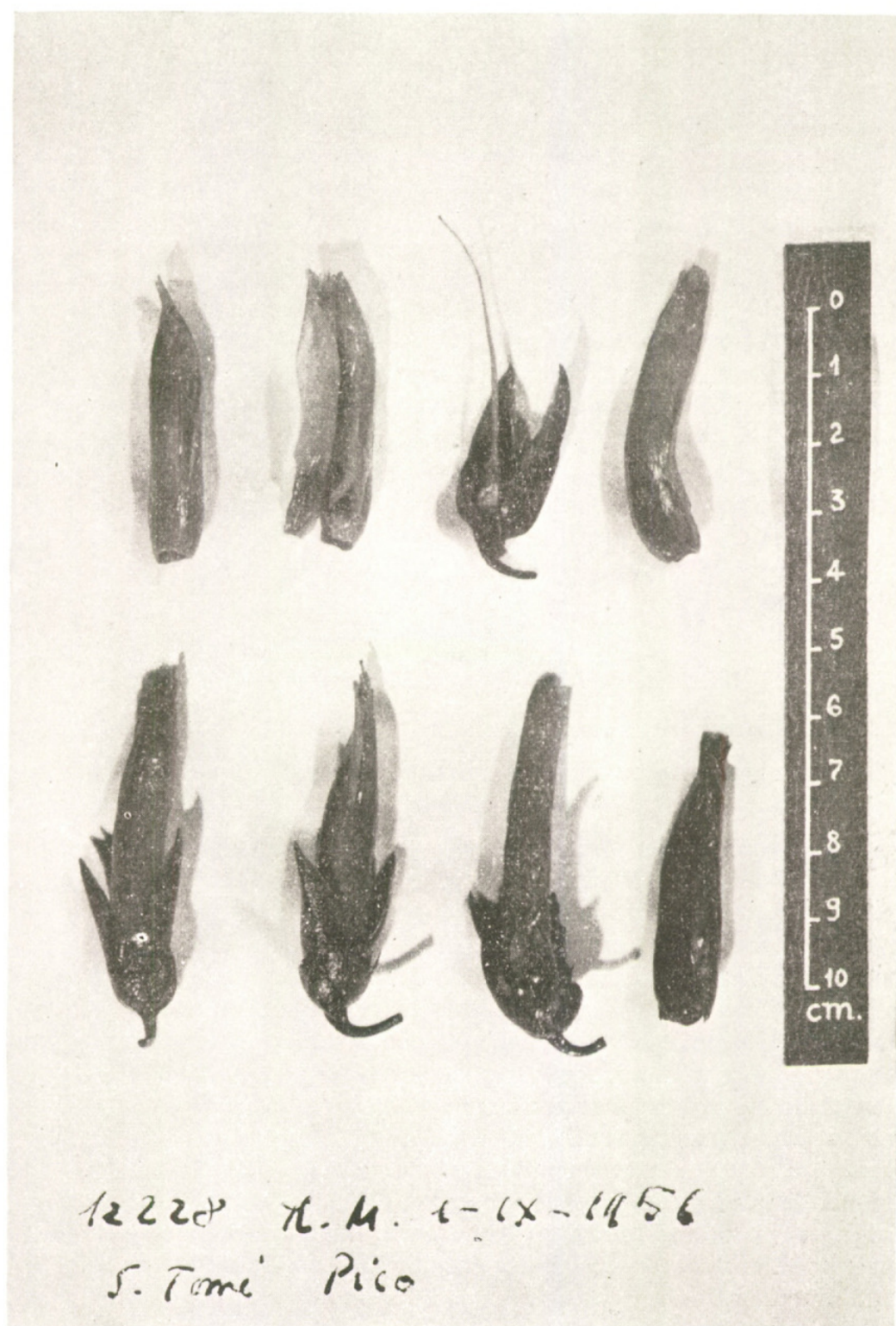


FIGURE 1. Flowers of *Melchiora mannii* (Oliver) Kobuski collected and photographed by Prof. Th. Monod (no. 12228) from Pico, São Tomé, the type-locality.

THE MELCHIORA SCHLIEBENII COMPLEX

Whereas *M. manii* appears to be confined to a small area at the summit of Pico on São Tomé, *M. schliebenii* and its varieties enjoy a much wider distribution having been collected (from known reports in literature) eight times in Tanganyika, twice in Belgian Congo, and once in Uganda. Even so, this actually is a sparse representation considering the comments on the field notes of the various collectors. Melchior, in the original presentation of the species referred to a letter from the collector (Schlieben), who stated that in the type-locality (Uluguru, Tanganyika) the species comprised seventy percent of the trees. Greenway noted on his no. 6556 that var. *greenwayi* was common on the stream banks in the Pare District, Tanga Province. Boutique and Troupin term var. *intermedia* the dominant feature of the forests in the Lake Kivu area of the Belgian Congo.

A distribution as extensive as this is enjoyed by only a few taxa in the family Theaceae and these taxa, in turn, are notorious in the variability of the usually "reliable" characters. One of these characters is pubescence and it is this character which in *M. schliebenii* shows the most variation. Only a much larger collection of material will show how stable this character is in the present group.

All the types of pubescence found on the taxa described in this complex are of the evanescent type, so common in the family. The leaves of var. *greenwayi*, densely pilose in the buds and younger growth become glabrous or glabrescent at maturity. The fine appressed pubescence found on the inner side of the sepals will wear off as will the thick pilose pubescence on the ovary and style. No fruiting material of the genus has been available to me for study. Melchior in his original presentation described the fruit of *M. schliebenii* and Boutique & Troupin, in turn included a description of the fruit of var. *intermedia* (*Adinandra intermedia*) in their work. In neither instance was any mention made of pubescence, hence one is justified in assuming that the fruit is glabrescent.

Verdcourt (Kew Bull. 1955: 609. 1956) in a discussion of this complex separates the varieties of *M. schliebenii* (as *Adinandra schliebenii*) on the pubescence of ovary, leaves and sepals. An adaptation of his key using the same characteristics is as follows:

- A. Ovary glabrous. *M. schliebenii* var. *glabra*.
- AA. Ovary pilose.
 - B. Leaves pubescent to velutinous below.
 *M. schliebenii* var. *greenwayi*.
 - BB. Leaves glabrous entirely.
 - C. Inner sepals \pm pubescent outside. . . *M. schliebenii* var. *schliebenii*.
 - CC. Inner sepals glabrous outside. . . . *M. schliebenii* var. *intermedia*.

In making a key to members of this family where pubescence is involved I have found in genus after genus that one of the most reliable basic characters is found in the terminal leaf-bud, which is usually present in most specimens. Only in the truly glabrous specimen will the leaf-bud be glabrous. In a pubescent or glabrescent specimen the leaf-bud will be

pubescent. This character is quite consistent throughout the whole family. A key based primarily on the leaf-bud character (differing but little from Verdcourt's key) would appear as follows:

- A. Leaf-buds glabrous.
 - B. Ovary and lower part of the style pubescent.
 - C. Sepals and bracts glabrous on the interior side and pubescent on the unexposed (portion concealed by the imbrication in the bud) part of the exterior side. 1. *M. schliebenii* var. *schliebenii*.
 - CC. Sepals and bracts appressed pubescent on the interior side and glabrous or quickly glabrescent on the exterior side. 2. *M. schliebenii* var. *intermedia*.
 - BB. Ovary and style glabrous. 3. *M. schliebenii* var. *glabra*.
- AA. Leaf-buds pubescent. 4. *M. schliebenii* var. *greenwayi*.

Melchiora schliebenii (Melchior) Kobuski in Jour. Arnold Arb. 37: 156. 1956.

Adinandra schliebenii Melchior in Notizbl. Bot. Gard. Mus. Berlin 11: 1076, 1097. 1934. — Kobuski in Jour. Arnold Arb. 28: 95. 1947. — Boutique & Troupin in Bull. Jard. Bot. Bruxelles 20: 65. 1950. — Verdcourt in Kew Bull. 1955: 608. 1956.

1. *Melchior schliebenii* var. *schliebenii*

TANGANYIKA TERRITORY: Uluguru, in fog forest northwest side of Lupanga Mountains; tree 20–30 m., flowering and fruiting, with orange and red flowers, *H. J. Schlieben* 3175 (ISOTYPES, AA and Yale), December 28, 1932.

During a recent conversation with Dr. William L. Stern, Curator of the Wood Collection and Herbarium of the Yale School of Forestry, I learned to my surprise that a set of the Schlieben collection from Tanganyika had been deposited at that institution. He has checked and sent me for annotation a sheet of the type-collection of this species. This is excellent news, indeed, since the Yale specimen proves to be the more complete of the two specimens examined. Up until recently, the type-collection cited above was the only representative of the species. However, another collection, *Drummond & Hemsley* 1766, from the same area is deposited in the herbarium of the Royal Botanic Garden at Kew and cited by Verdcourt in his most recent work.

Like var. *intermedia* this taxon has glabrous leaf-buds, with the ovary and lower part of the style pubescent.

The sepals and bracteoles, however, are glabrous on the interior side and pubescent on the unexposed parts of the exterior side. The disposition of the pubescence on the inner three sepals is very interesting and very characteristic of many taxa in the family Theaceae. The portions of the exterior side of the sepals exposed in the bud are glabrous. This means that the two outer sepals are entirely glabrous. The next two sepals are pubescent on the half side which is covered while the uncovered half is glabrous. The inner sepal, because of its position in the imbrication is generally pubescent over the entire exterior surface or generally so.

Melchiora schliebenii (Melchior) Kobuski var. **intermedia** (Boutique & Troupin) Kobuski, comb. nov.

Adinandra intermedia Boutique & Troupin in Bull. Jard. Bot. Bruxelles 20: 62. 1950.

Adinandra schliebenii Melch. var. *intermedia* (Boutique & Troupin) Verdcourt in Kew Bull. 1955: 608. 1956.

Melchiora intermedia (Boutique & Troupin) Kobuski in Jour. Arnold Arb. 37: 157. 1956.

Adinandropsis, sp. nov. Pitt-Schenkel in Jour. Ecol. 26: 80. 1938, nom. nud.

BELGIAN CONGO: PROV. KIVU: Mayamoto, forêt ombrophile de montagne, fond de ravin, alt. 2350 m., *A. Michelson* 742 (TYPE, BRLU; ISOTYPE, A), Déc. 1947.

We appreciate very much and are most grateful to the Jardin Botanique de l'Etat of Brussels for sending us an isotype of this taxon for our herbaria. Besides the type which was collected in Belgian Congo, Boutique and Troupin cited three other specimens, a second from the type region, and one each from Kigezi in Uganda and Mt. Usambara in the Territory of Tanganyika. This area of distribution comprises a region extending well over seven hundred miles and the authors report the taxon to be the dominant plant of the Kivu region.

The sepals and bracts are glabrous on the exterior surface and appressed pubescent on the interior surface. In this character it is similar to var. *greenwayi*. However, the latter variety has leaf-buds and, of course, mature leaves which are strictly glabrous.

Melchiora schliebenii (Melchior) Kobuski var. **glabra** (Verdcourt) Kobuski, comb. nov.

Adinandra schliebenii Melchior var. *glabra* Verdcourt in Kew Bull. 1955: 608. 1956.

NO SPECIMENS EXAMINED.

This appears to be a completely glabrous variation of the typical variety. In the original description Verdcourt mentions only the glabrous ovary. However, in his short discussion he states that he had considered including the new variety under var. *intermedia* but because of the "peculiar" plants as yet undescribed from the area of the W. Usambaras he suggested that the glabrous ovary may be correlated with a limited distribution.

Two specimens were cited by Verdcourt [*Procter* 183 (EA) and *Drummond & Hemsley* 2536 (K)] both collected in the Lushoto District at altitudes of 2220 m. and 2230 m. respectively. Furthermore, it was suggested by the collectors that both representatives grew on the exposed ridgetops or, when in the forests, in the drier parts.

It is not unusual for taxa in the family Theaceae to take on a glabrous character when found growing in high dry exposed places.

Unfortunately, no duplicates of the type of this variety have been available to me. It would be interesting to know whether the interior side of

the bracts and sepals are appressed pubescent as in var. *intermedia* or are strictly glabrous.

Melchiora schliebenii (Melchior) Kobuski var. **greenwayi** (Verdcourt) Kobuski, comb. nov.

Adinandra greenwayi Verdcourt in Kew Bull. 1953: 84. 1953.

Adinandra schliebenii Melchior var. *greenwayi* (Verdcourt) Verdcourt in Kew Bull. 1955: 608. 1956.

TANGANYIKA TERRITORY: TANGA PROV.: Pare Distr., S. Pare Mts. Mtonto, alt. 6500 ft., locally common on stream banks in *Ocotea-Podocarpus-Rapanea-Myrica* evergreen forest on steep mountain slopes, P. J. Greenway 6556 (TYPE, K; ISOTYPES A and EA), July 5, 1942 (much branched evergreen tree with ascending branches up to 80 ft. tall; the bark reddish brown, much fissured in reticulate patches; the flowers large tubular creamy brown with green tipped petals; the mature leaves with a brownish cream band each side of the main vein).

A very ample specimen of the type number of this taxon was given us by the East African Herbarium at Nairobi, Kenya, East Africa.

The sepals and bracts as in var. *intermedia* are glabrous on the exterior surface and appressed pubescent on the interior surface. However, the terminal leaf-buds differ from all other taxa in this complex in being tomentose. This character is retained into the younger stages of the mature leaves but later in the older leaves tends toward glabrescence. This taxon may represent the original entity in the complex.

At present these varieties seem clearly distinguishable. One must remember, however, that the species is one of wide distribution and is found in considerable abundance in several areas. The herbarium specimens available for study are as yet far too few in number to assume that the varieties recorded above will be maintained when further collections are examined, as they are based primarily on the pubescence, a character very variable in this family. As I mentioned before, I feel that the original element in the complex is var. *greenwayi* and that the other three are variations from it, with var. *glabra* the most recent and perhaps the least dependable of the group.

ARNOLD ARBORETUM AND GRAY HERBARIUM,
HARVARD UNIVERSITY.

EXPLANATION OF PLATES

PLATE I. Isotype of *Melchiora mannii* (Oliver) Kobuski. *G. Mann 1066* in the Gray Herbarium.

PLATE II. Isotype of *Melchiora schliebenii* (Melchior) Kobuski. *H. J. Schlieben 3175* in Yale University.

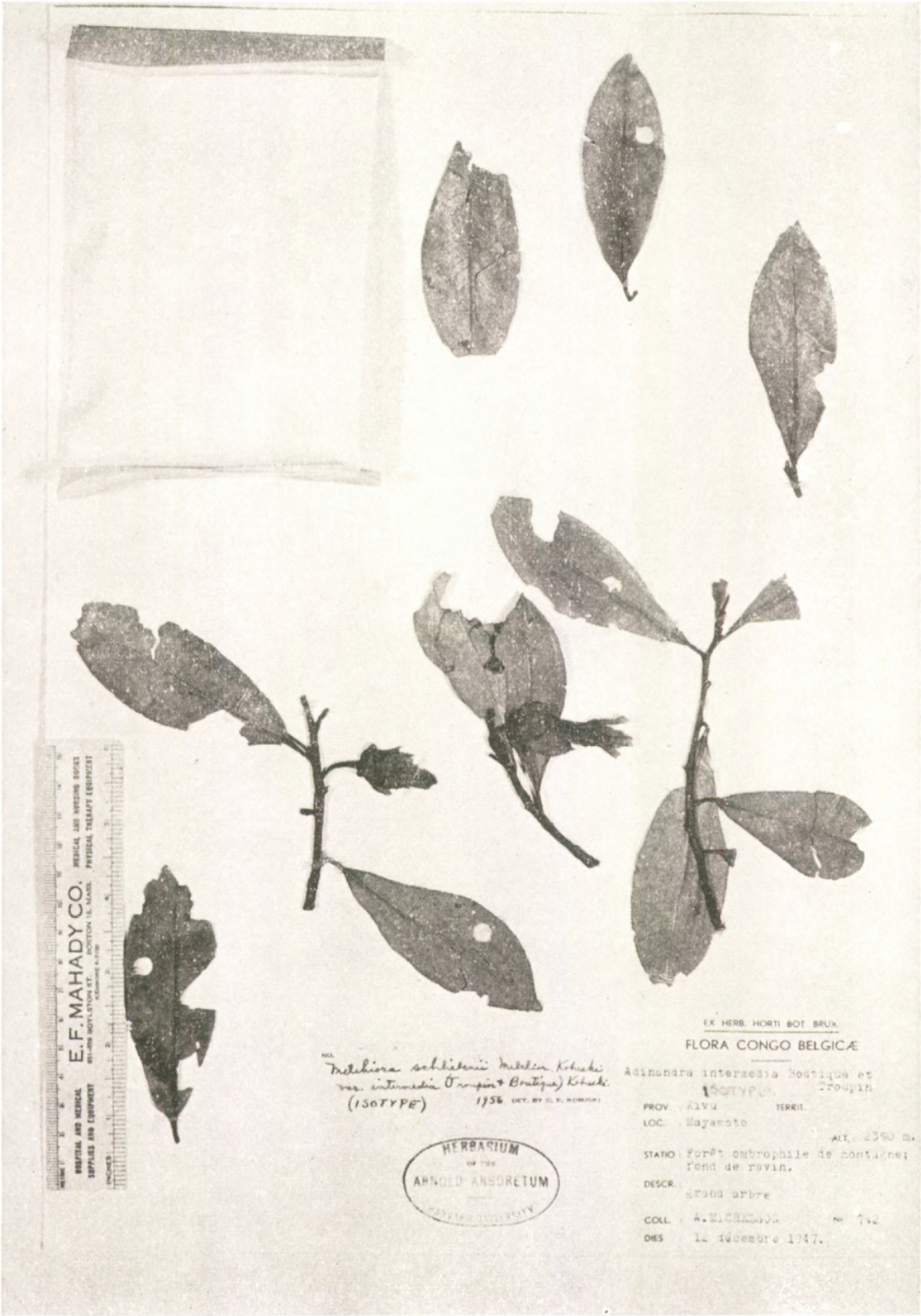
PLATE III. Isotype of *Melchiora schliebenii* (Melchior) Kobuski var. *intermedia* (Boutique & Troupin) Kobuski. *A. Michelson 742* in the Arnold Arboretum.

PLATE IV. Holotype of *Melchiora schliebenii* (Melchior) Kobuski var. *greenwayi* (Verdcourt) Kobuski. *P. J. Greenway 6556* in the Royal Botanic Garden, Kew.

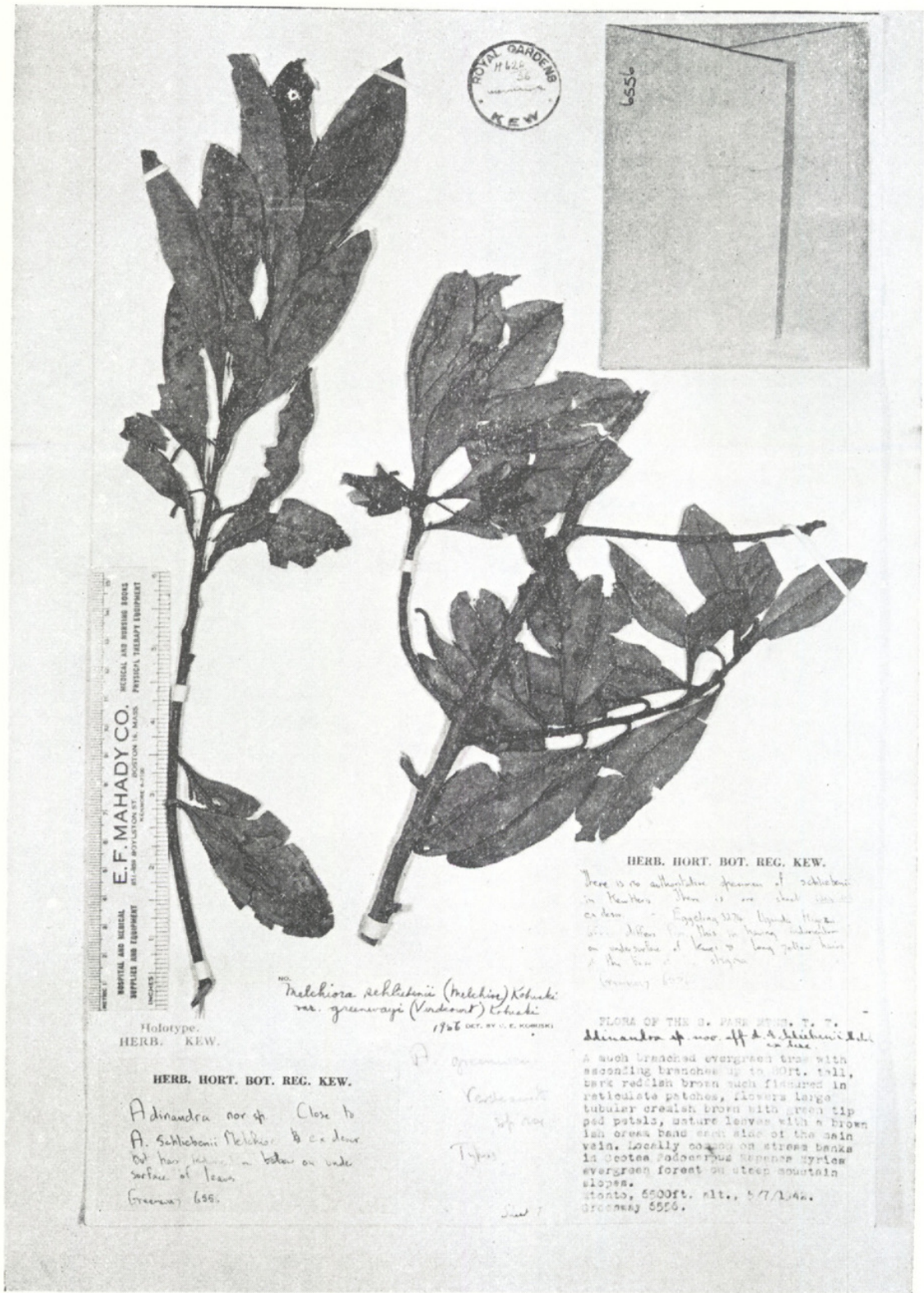




MELCHIORA SCHLIEBENII (MELCHIOR) KOBUSKI



MELCHIORA SCHLIEBENII (MELCHIOR) KOBUSKI
VAR. INTERMEDIA (BOUTIQUE & TROUPIN) KOBUSKI



MELCHIORA SCHLIEBENII (MELCHIOR) KOBUSKI
VAR. GREENWAYI (VERDCOURT) KOBUSKI



Kobuski, Clarence Emmeren. 1957. "Studies in the Theaceae, XXIX. Further Studies in the Genus Melchiora." *Journal of the Arnold Arboretum* 38(2), 199–209. <https://doi.org/10.5962/p.324656>.

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