

IMPORTANCE OF THE STUDY OF WOOD ANATOMY

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To the "Reunião de anatomistas de Madeiras" I extend my heartiest congratulations and best wishes. As Secretary of the International Association of Wood Anatomists it is my privilege to know of the to know of the work being done by our members in all parts of the world. In a few short years I have witnessed the phenomenal development of wood anatomy from a little-known, unorganized subject to an important and substantial branch of science that commands universal respect. The secret of this rapid progress is contained in a single word: cooperation. We are true companions in research. We are freely exchanging our ideas and materials and giving one another the benefit of our personal experiences; in so doing each of us finds his own task easier and the results of his individual efforts greater and more enduring.

I wish that I could be present at your conference, not because of anything that I could contribute, but rather for the inspiration that I should receive, for I know that the spirit that will permeate your discussions will be one of mutual helpfulness. I have a feeling that this meeting is of greater portent for good than you yourselves now realize. You have a just right to be proud of the progress now being made in your country in the study of your timbers. I wish publicly to acknowledge the great assistance rendered by Sr. ARTHUR DE MIRANDA BASTOS and Prof. FERNANDO ROMANO MILANEZ in the early work of organizing our Association and in the

preparation of the Portuguese version of the approved glossary of terms used in describing woods. I can honestly say that no collaborators responded more generously or realized more fully the opportunities for cooperative service. In your present convention I see an extension of that assistance, not only within the national boundaries of Brazil, but also to her sister Republics, especially Argentina.

The extent of Brazil is so vast and the area so diversified that to know your forests is to know virtually all of South America. Some of your timbers have been long and favorably known to the world's markets, but there is an enormous store awaiting development. Markets must be created in fields where competition is strong. Except in the case of precious woods, trial shipments of logs or exhibits of lumber samples are not enough; they must be accompanied and supported by complete and reliable information as to sources, supply, properties, peculiarities, and use. It is to your interest to provide as much data of that kind as possible.

In an undertaking so great it may appear strange to begin with a microscope. Why place so much emphasis on the anatomy of wood? The answer is that it is principally in anatomy that one timber differs from another. Wood is an intricate structure, and while all kinds are constructed from much the same elemental substance, they are infinitely variable in architectural design. Through knowledge of likenesses and differences, a wood sample can be identified with the species or genus of tree that produce it, and establishment of identity is a prime essential in promoting the utilization of a new timber. The botanical name of a tree may provide the key to a store of useful information which otherwise would be unavailable. There is much in a name, and only a person familiar with the intricate details of anatomy can certify that a wood is correctly named.

Let me cite from my experience a few examples of the practical significance of names. Several years ago a trial shipment of railway cross-ties from the Amazonian forest was sent to the United States. Those ties were supposed to be of only a few kinds, all noted for their durability, but many of them began to fail within a year or two after being installed in the track. The experiment was considered a failure and the reputation of Brazilian timbers was injured. I examined a large number of the sleepers and discovered that comparatively few were true to name and that instead of being your best woods, they were a heterogeneous lot, mostly of species wholly unsuited for use in contact with the ground,

while the best of them were poorly selected. My report failed to remove the bad impression that had been created, because there was no assurance that new shipments would be any better.

Quite recently I was asked to arbitrate a dispute between a New York importer and a shipper from a certain tropical American country (not Brazil!). The importer claimed that the logs he received were not the kind of wood he had ordered, although the consignment was certified by a government inspector of the country of origin as being true to name. Since the name used is none too well established in trade, it was first necessary for me to find out what each party had in mind, and samples from both sources proved to be identical. It was then a very simple matter to convince the disputants that the logs were wholly unlike the samples and useless for the purpose for which they had been ordered. Obviously the shipper himself had been deceived and there were no local facilities for preventing a rather costly mistake.

About a year ago I was asked for a list of timbers that had the necessary durability, strength, and resilience for exacting uses in paper-making machines. Service tests have indicated that one kind of Massaranduba will prove satisfactory. I have before me a report on these tests, from which the following is a quotation: "Two beaters used for bleaching were filled with 2-piece filling at the same time, one with the customary Oak [*Quercus*] filling, the other with Massaranduba. The Oak filling has failed, while the Massaranduba is in service and apparently as good as when installed". It has been found, however, that there are several kinds of timber known in Brazil as Massaranduba and that only one of them has all of the necessary properties for the purposes intended. From a study of authentic specimens collected by Dr. Adolpho Ducke and aided by the excellent report by Professor Milanez entitled "*Estrutura do lenho do Mimusops Huberi*," I am convinced that the timber that has proved so satisfactory is of that species, the so-called *true* Massaranduba. If a market is to be developed it is important that care be taken to assure the consumer a supply of the right kind of Massaranduba and to protect him from sorts not adopted for his special purposes.

United States dealers are constantly receiving trial consignments of logs and it has become almost routine for samples of these to be sent to me for report as to their identity and possible uses. Always my first step is to find out if I can, what the wood in question is. Then I turn to my files of memoranda and reports and to books for information on the same or related kinds of timber.

Sometimes I can be of service in pointing to a profitable outlet, but all too often I must acknowledge defeat. The knowledge of tropical timbers is still chaotic and incomplete. No country has a greater opportunity for service in this field than has Brazil. You have scientists who are fully competent to do the work. I give you the assurance that your fellow workers in other parts of the world will gladly render you every assistance within their power.

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