

grouped on greenish to brownish areas of indefinite extent, pustular, 0.1 to 0.2 mm. in diameter, opening outwards through a centrally placed stomatic pore in the overlying brownish epidermis; peridium hemispheric, hyaline, delicate; peridial cells isodiametrically to irregularly polygonal, 8 to 15  $\mu$  across; walls of peridial cells hyaline, 0.5 to 1.0  $\mu$  thick; uredospores colorless, smooth, thin-walled (0.5–1  $\mu$ ), short-stalked, obovate to elliptical or subspherical, 14–17  $\times$  18–31  $\mu$ , averaging about 15  $\times$  23  $\mu$ .

### III. Unknown.

The type material of this species was collected on *Aspidium Braunii* Spenner by Antoine Wróblewski at Kniaźdwór, District of Kolomea, Poland in August, 1913. I have also had the opportunity of studying further material on the same host from Olszanica, Lesko, Poland, collected October 18, 1917. It is to be expected that an abundance of telia develops on overwintered fronds in late spring or early summer; and it is almost equally certain that the peridermial stage occurs on *Abies*.

PATHOLOGICAL LABORATORY, ARNOLD ARBORETUM,  
HARVARD UNIVERSITY.

---

## NOTES

**A Silvicultural Study of *Abies pinsapo*.** Under the title "A travers les forêts de Pinsapo d'Andalousie" A. Barbey<sup>1</sup> has published a detailed study of *Abies pinsapo* considering it from a dendrological, silvicultural and entomological point of view. The author is a grandson of Edmond Boissier who in 1837 first recognized and described this Fir as a new species and whose portrait forms the frontispiece of the volume. A brief biography of Boissier is given and his description of *Abies pinsapo* is reprinted and also that part of his "Voyage botanique dans le midi d'Espagne"<sup>2</sup> which refers to *Abies pinsapo* with reproductions of the two original plates of that Fir and one of *Quercus alpestris* Boiss. In 1929 the author visited the Sierra de Ronda and adjoining mountain ranges in Andalusia to study *Abies pinsapo* from a silvicultural point of view. In this region the forests of Pinsapo are found at an altitude of 1000–1800 m. and cover approximately an area of 1200 hectares. The tree has many enemies and if no protective measures are taken, it may disappear altogether from its native habitat. Natural re-

<sup>1</sup> Barbey, A. À travers les forêts de Pinsapo d'Andalousie; étude de dendrologie, de sylviculture et d'entomologie forestière. Préface de M. L. Pardé. 110 pp. 41 pl. O. Paris & Gembloux, 1931.

<sup>2</sup> A copy of this very rare work by Boissier with 181 (207) hand colored plates is to be found in the Library of the Arnold Arboretum.

generation is prevented or made difficult by grazing animals, such as goats, sheep and cattle; many insects prey on the trees, and drought during the summer is also often injurious. Besides, charcoal burners do much harm by cutting off the branches to a considerable height and formerly the "neveros," men who collected snow for refrigerating purposes, were careless with fire and burned old trees and destroyed young growth when working on the high plateaus, but since artificial ice has chiefly replaced the condensed snow brought from the mountains, the menace of the "neveros" has become negligible. Numerous photographs show stands of Pinsapo in various aspects, the young trees often mutilated and deformed by goats and sheep. There are also pictures of fine trees in cultivation in different countries of Europe where it has been planted as an ornamental tree and even has given rise to a number of interesting garden forms. There will perhaps soon be more and finer specimens of this tree in gardens and parks outside of Spain than in its original habitat, if immediate measures are not taken for its protection. To the insects preying on the Pinsapo the author who is an authority on forest entomology has paid special attention and enumerates a considerable number of species chiefly Coleoptera and describes and figures them and their ravages. There is also a brief chapter dealing with the insects of *Quercus alpestris* which is associated in the Sierra de Ronda with the Pinsapo and of which an ancient and interesting stand is described but which, since it has no chance of regeneration on account of unrestricted grazing, will probably disappear within the century. In his concluding remarks the author recommends protective measures for the Pinsapo whose great vitality is shown in the fact that it has been able to maintain itself in spite of its numerous enemies. With proper protection it would no doubt again form flourishing forests and might be used for the afforestation of other mountains in the Peninsula; this would be of great benefit to the population and to the development of agriculture.—A. R.



Rehder, Alfred. 1931. "Notes." *Journal of the Arnold Arboretum* 12(3), 219–220.  
<https://doi.org/10.5962/p.185233>.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/33588>

**DOI:** <https://doi.org/10.5962/p.185233>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/185233>

#### **Holding Institution**

Missouri Botanical Garden, Peter H. Raven Library

#### **Sponsored by**

Missouri Botanical Garden

#### **Copyright & Reuse**

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Arnold Arboretum of Harvard University

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.