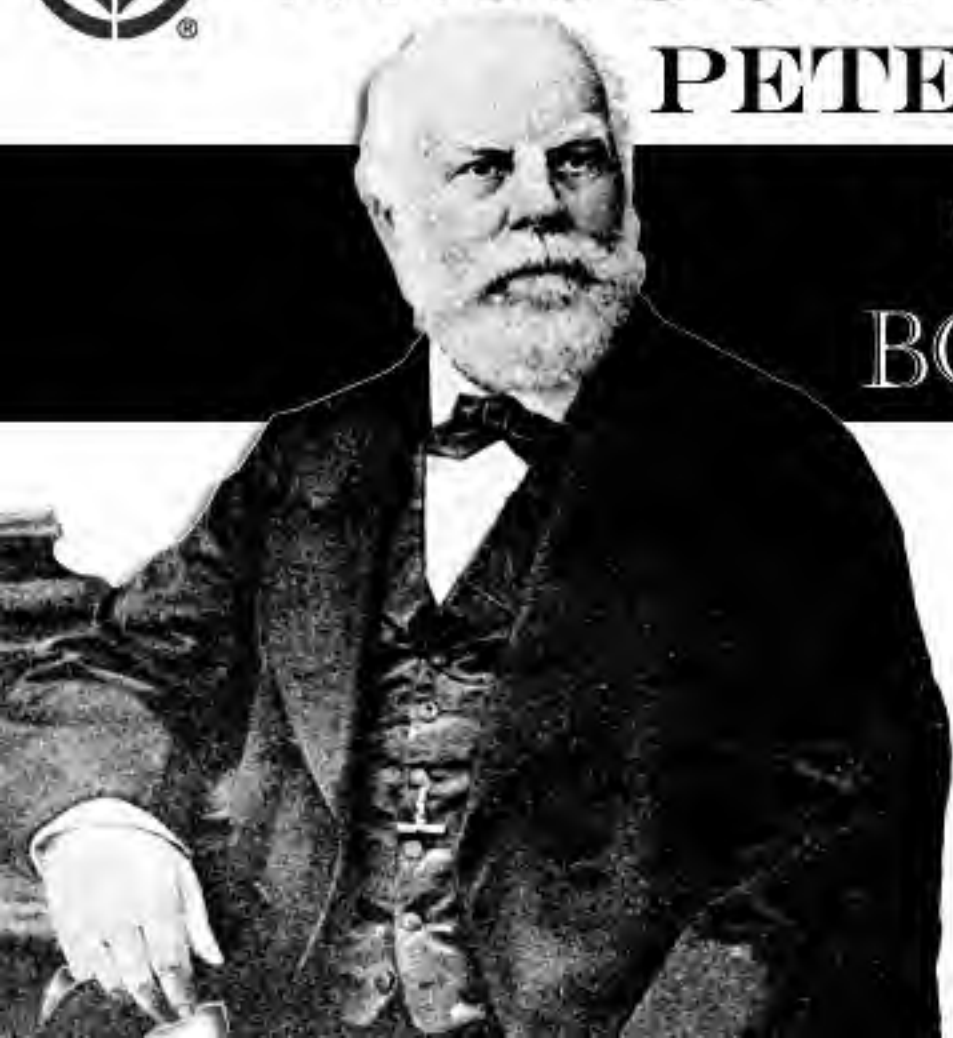




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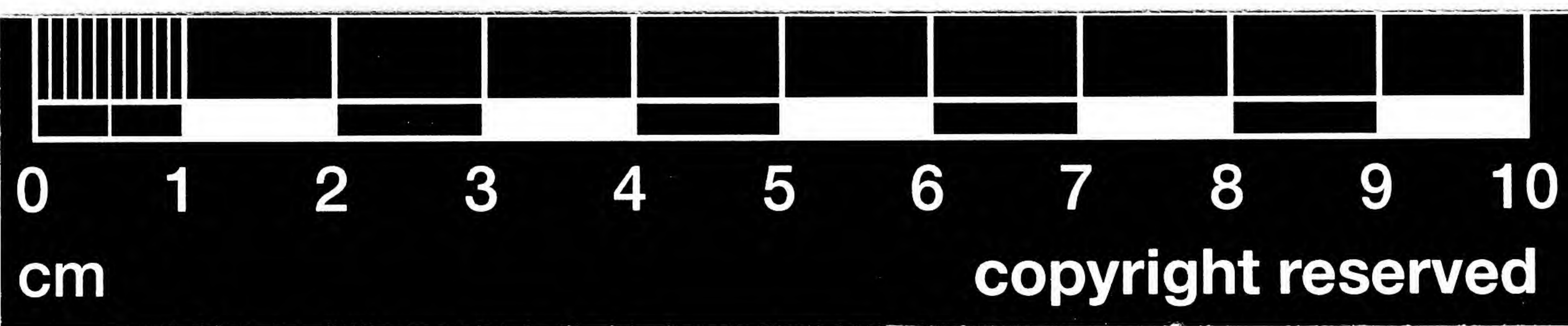


GEORGE ENGELMANN  
BOTANICAL NOTEBOOKS

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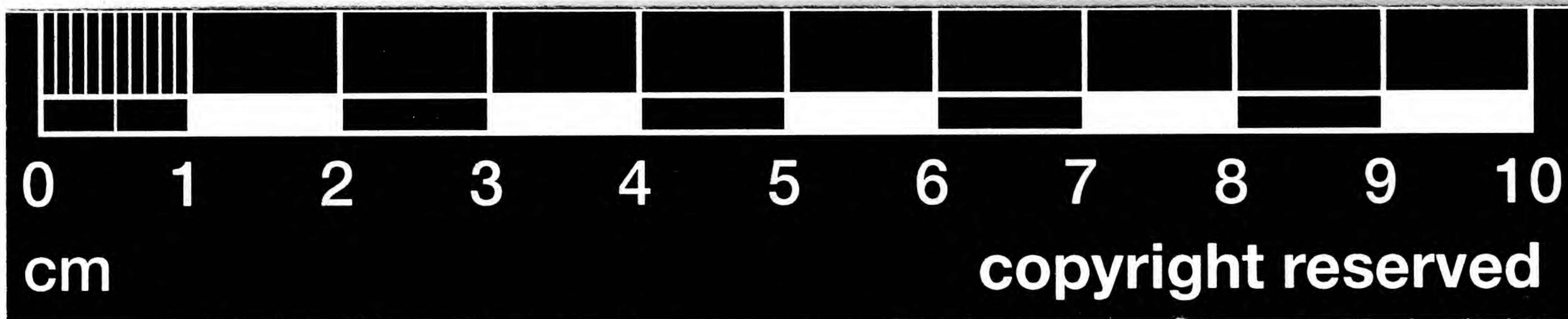
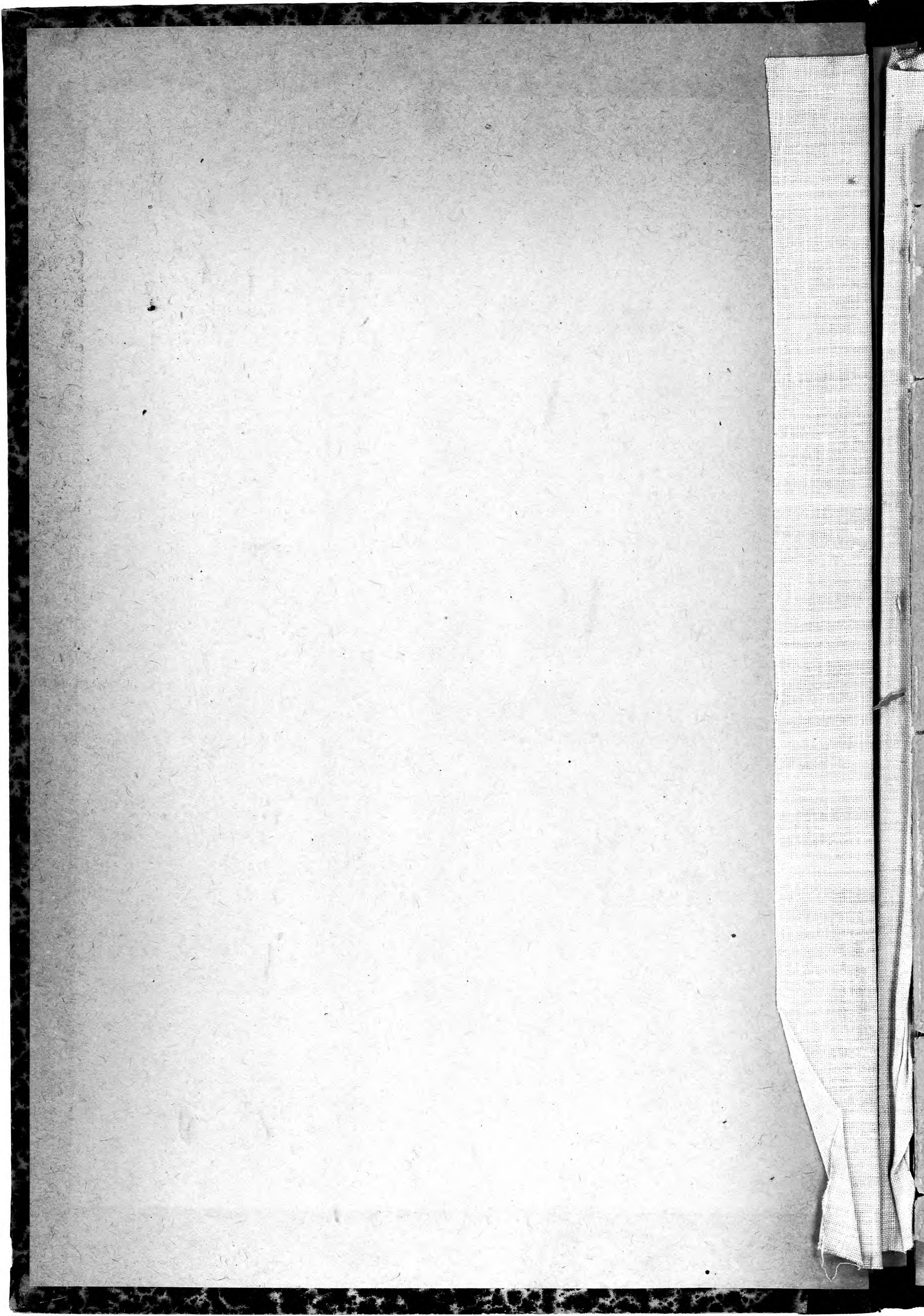
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# Directions

on the species of marine Phanerogamae  
to be looked for on the coasts  
of North America

## I. On the Atlantic coast

1. Zostera marina L., the common eel-grass. Flowering July (in the warmer May) to
2. Z. nana Rth., found almost everywhere in the northern temperate zone with the former viz. in Europe, the Canarian island, Japan therefore to be expected on the seaside of the Atlantic states. It is easily distinguishable from the common eel-grass by its more delicate growth, its narrower leaves ( $\frac{1}{3}$  - 1 line wide) distinguished with a very different nervature, viz a very strong middle nerve and two <sup>likewise</sup> also strong exactly marginal ones between which 2 - 4 secondary ones are found on each side. In the common eel-gr. 3 - 5 (rarely to 7) primary nerves, none of



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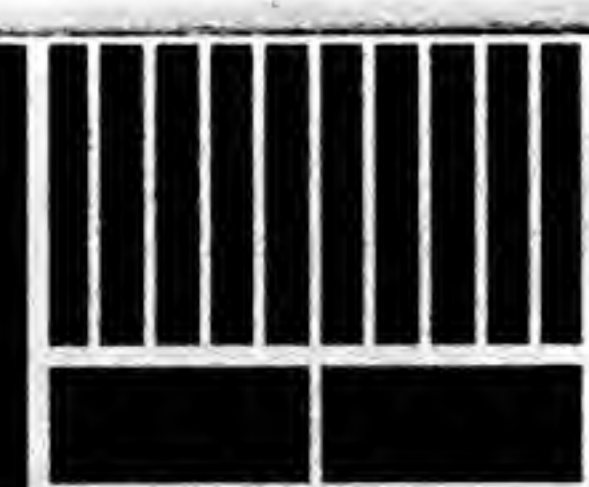
which is closely approximated to the ~~main~~ almost  
edges of the leaf, are <sup>little</sup> stronger than the <sup>primary</sup>  
numerous secondary ones. In both species  
the leaves are somewhat emarginated on the <sup>white</sup>  
top but not denticulate. 2. nana fl. <sup>white an</sup>  
from June to

## II On the Gulf coast.

<sup>esidy</sup>  
Beyond the

Zostera marian, found by Chapman on  
the West-Florida coast,  
to be expected

3. Thalassia testudinum Kön., the <sup>largest</sup>  
grass of the Westindian islands. Its <sup>leaves</sup>  
are somewhat larger than in the <sup>common</sup>  
eelgrass ( $\frac{1}{4}$  - 1 inch wide) <sup>with</sup>  
11 - 13 longitudinal primary nerves, between the  
which are 2 - 4 secondary <sup>of the</sup>  
ones, connected by very numerous trans-  
versal ones (the area dotted with dark  
brown dots and lines). The flowers, <sup>was</sup>  
and <sup>denticulate</sup> minutely <sup>not</sup> <sup>shar</sup>  
ginate) <sup>top</sup> on the blunt (not



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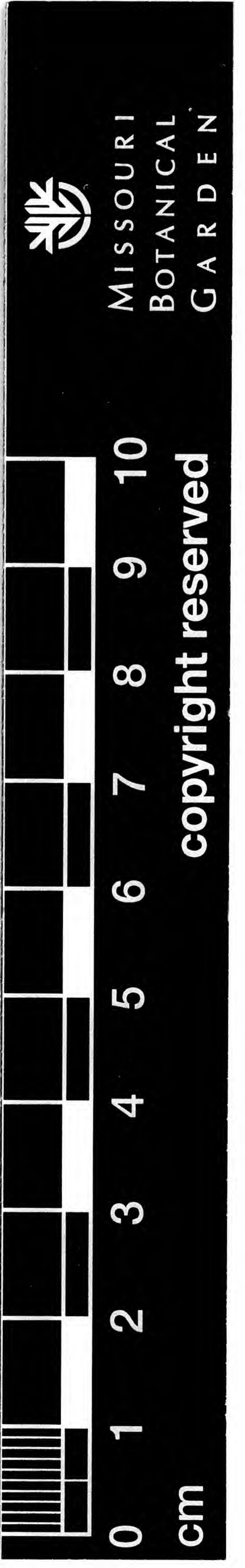


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almost all botanical collections appear  
July. The male flower, comparatively large  
solitary, e. by a bifid spathe, with  
3 (white?) sepals  $\frac{1}{2}$  inch long, and 9 (or 12?)  
sessile anthers. The female flower unknown.  
The fruit, when, as it is to be supposed,  
similar to that of the Asiatic Chizotheca  
Hemprichii, ~~2-4 seeded~~ rough with  
green, herbaceous prickles, 2-4 seeded, but  
like into numerous valves.

where it flowers submerged or  
floating

4. Halodule sp. ? (seen from the island  
of St. Thomas); <sup>closely</sup> similar to the Zostera name  
but distinguishable by its indistinct  
secondary nerves on the leaves tridentate  
on the top by the excurrent marginal and  
middle nerves. The middle tooth is blunter  
than the lateral ones. The male flower  
of the African H. australis Mig. <sup>only known</sup> is a  
longly stalked anther the cells of which  
are inserted on the stalk in somewhat  
different height



5. The "Alga janoea of Hoane or  
Manaki grasse (Hist. Jam. I. tab  
22 fig. 5.) a singular marine plant  
with creeping roots and rush-like  
leaves ( $1\frac{1}{2}$  lines wide,  $\frac{7}{8}$  inches long  
we know from the Indian Ocean  
a similar species (Cymodocea ~~agave~~ isoc-  
folia Aris.) the West Indian plant ought  
to be looked for.

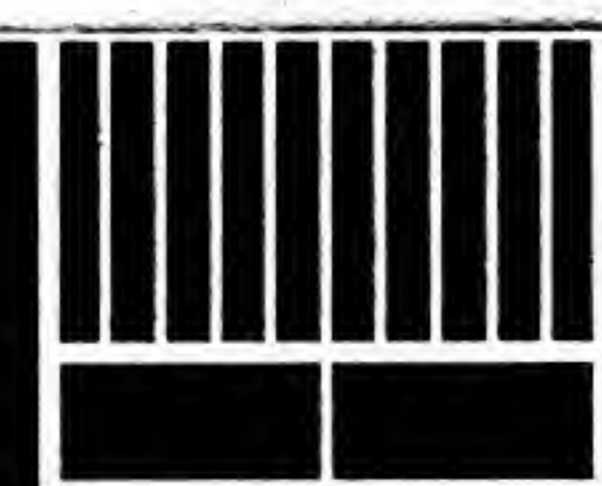
### III On the Pacific coast

Beyond the

Zostera marina, found in Unalaska and the  
Z. nana, found in Japan

6. Phyllospadix Coulteri <sup>Hook.</sup> closely similar in leaves  
to the Zostera marina, differs by its densely  
fibrous root (all the species quoted formerly  
have creeping roots). The flowers, wanting  
it almost everywhere, are <sup>also</sup> similar to the  
common eel-grass, but dioecious, the female one  
and fruit only known, the male to be  
Found from the Oregon River to Monterey in Upper Calif.

7. P. serrulata Rupr., closely similar to the former,  
which it differs by its minutely and sharply denticulate  
leaves. Found only ejected on the shore of Sitka or Unalaska  
Berlin 1 June 1868. P. Ascherson M. D.



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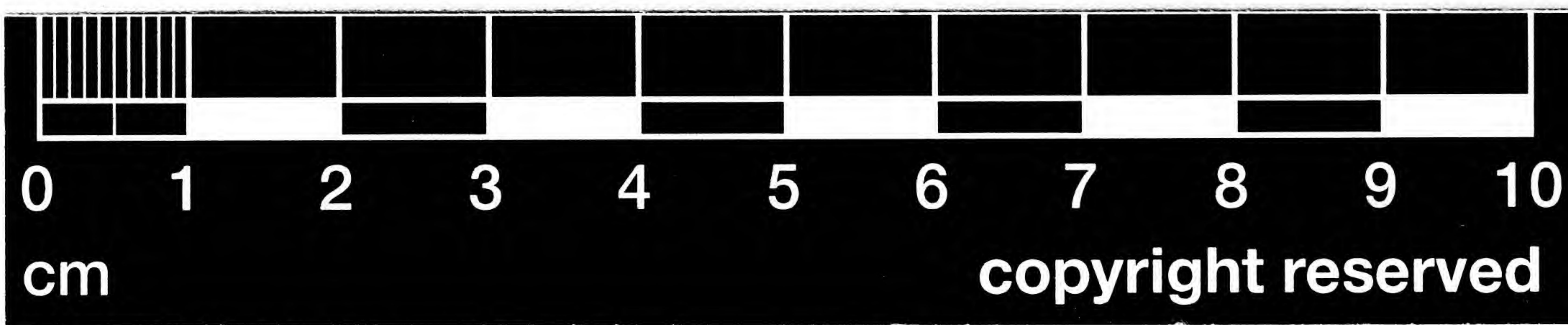
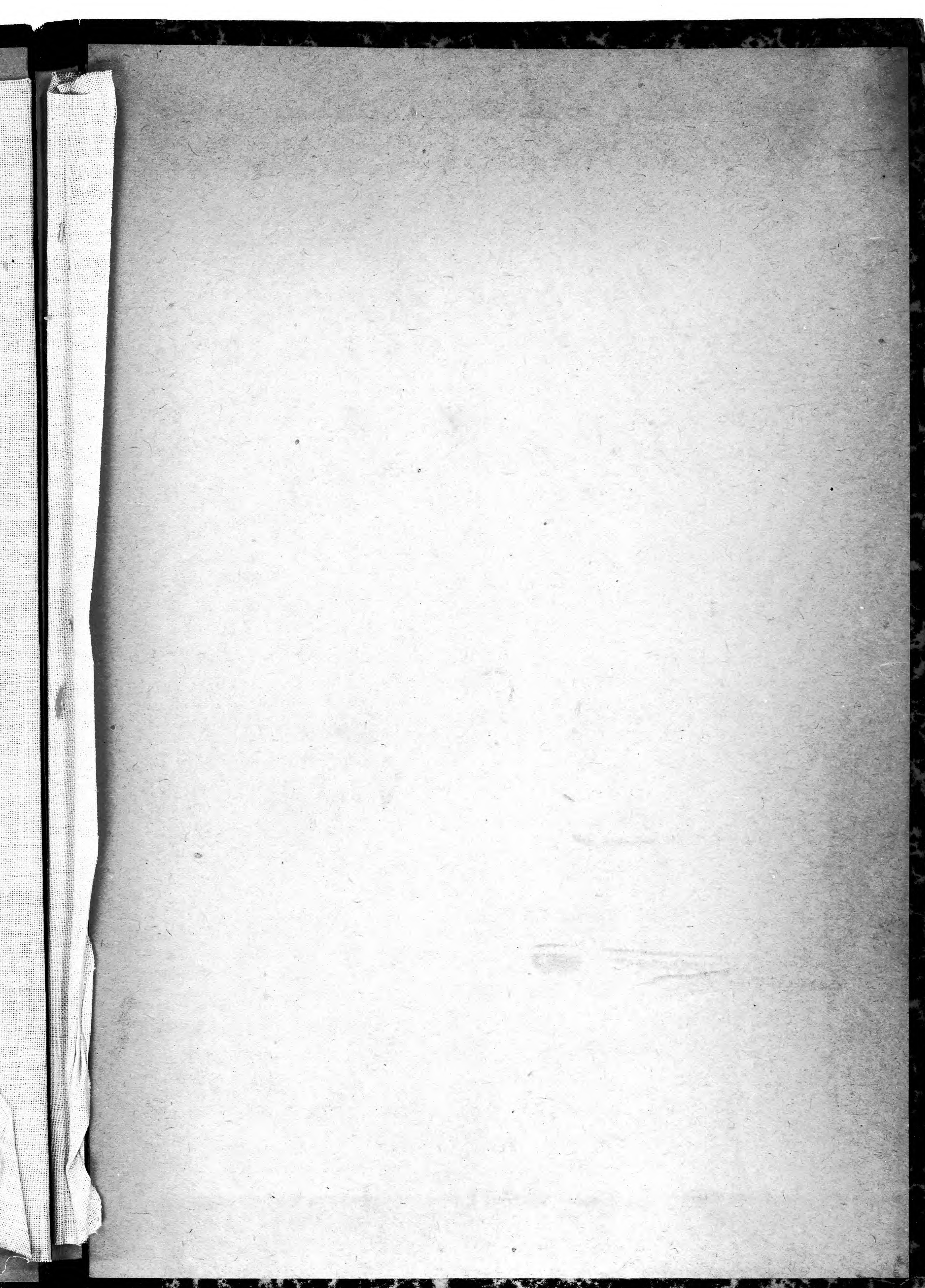
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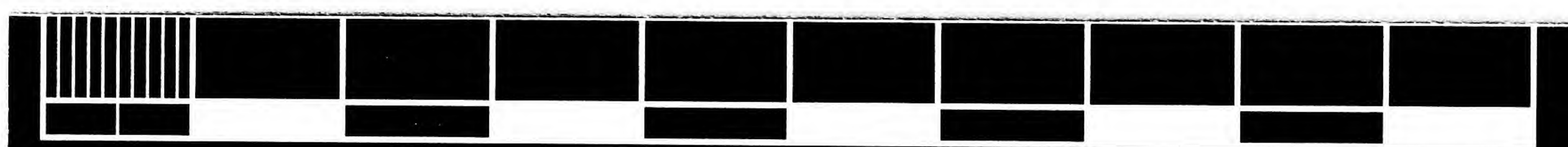
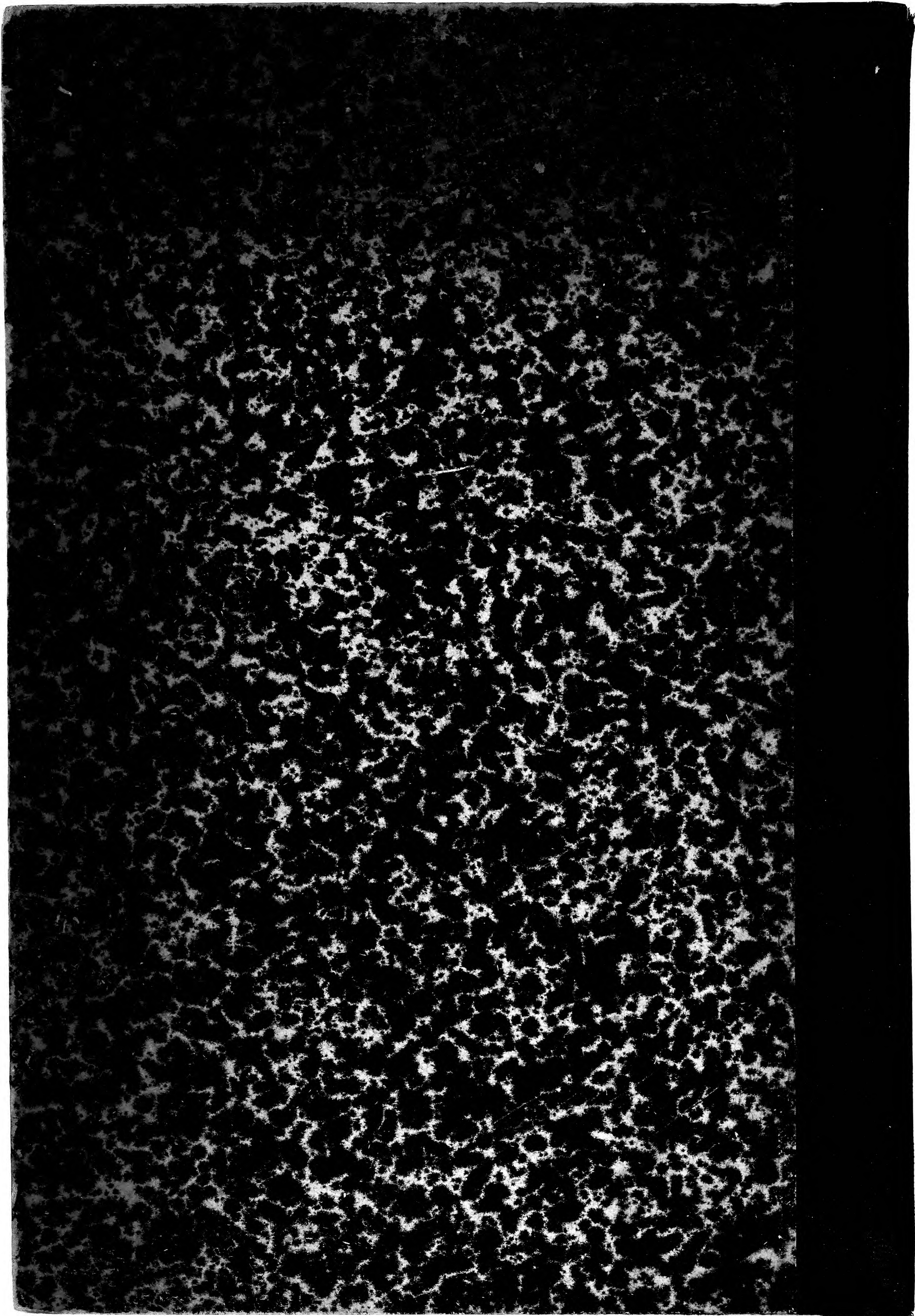
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