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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

Sci Socy, New York
1870

In selecting a subject for my talk this evening I have endeavored to choose such a one as would contain a hint or two which might ^{improve} ~~substantiate~~ the young naturalist for some of the peculiarities he is destined to meet with.

I have therefore collected a few facts relating to certain irregularities ^{sometimes} ~~are~~ ^{found} in the flora of any country.

A careful study of the ordinary manuals of Botany will show that a very great number of plants have certain marked varieties common to certain localities. These varieties are often so marked as to puzzle the naturalist exceedingly. He is often at a loss to know whether to call a certain marked set of plants - a distinct species - or but a variety of some other species.

This trouble is increased by the fact of certain unexplained irregularities in the appearance of the plants from year to year.

Among these irregularities - may be mentioned first that of the ^{sudden} appearance of a certain species in a locality where it had not existed before - or when it had been very rare - This sometimes occurs - and when the new ~~species~~ ^{plant} bears a close resemblance to ~~the~~ an old species - It is a difficult matter to decide whether the new one is or is not entitled to be called a separate species -

As an example ~~permit~~ ^{allow} me to ~~note~~ ^{call} your attention to a case which came under my observation -

In the Flora of Lansing Mich. the common spring plant called the Yellow Adder Tongue - is found in great abundance - This as you know is uniformly yellow - while the leaves of the plant are a mottled green - In the same Flora previous to the year 1869 the other species called the White Adder Tongue - had not been found more than ~~two~~ or three times within the last five years

This white species is described by Gray as being quite different from the yellow - and he accordingly recognizes it as a different species -

A close examination shows a marked difference also. Certain parts of the flower seem uniformly to have a different form in the white from what they have in the yellow - - This added to the difference ^{in color} has been considered as sufficient proof of its being a distinct species -

Last year however some facts transpired which seem to ^{destroy} ~~upset~~ all ~~certainly~~ upon this point - Last Spring when the May flowers made their appearance the Yellow Adder's Tongues were found in great abundance as usual - but to the great delight of enthusiastic botanists the white was also found here and there - This was at first considered but as a rare streak of good luck - but it soon became evident that the white plant was in greater abundance than formerly, But the wonder did not stop here -

- By Sooner the white plant was
- found in a great many places
where it had not been known before.

Places where in previous years the
Yellow alone had abounded - were last
year filled with the white - notwithstanding
the exclusion of the Yellow - but they
were found in ^{astounding} ~~considerable~~ abundance
considering their former rarity -

Now it is possible to

The question now arises - "Is the
white plant a separate species from the
yellow or only a variety?" as its abun-
dant ~~would seem to imply~~ ^{it is abundant}

Separate species - whence came the
seeds from which sprang up the plants of
last year?

It is possible to con-
ceive of methods by which the seeds might
have been distributed - but none of them
seem probable.

For example it might
possibly be through the agency of birds - but
the wide distribution of the plants would not
warrant accepting any such explanation -

Then again it might be claimed
that the abundance of rain may have

So flooded the land as to float the seeds to places where they had not been noticed before - But still this would not account for the astonishing increase in number - A few seeds may be floated by the water to new localities but there would be so much loss by this method of transportation that we cannot admit ^{its} ~~the~~ probability of in this case -

It may finally be claimed that the seeds may have lain in ground - latent ^{for years} - and that the very wet season brought about the proper conditions for the germination of the seed -

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But this may have been the case ^{it is} rendered somewhat doubtful by the fact that the ~~seeds~~ of the Onion and Leek - which are nearly related - do not retain their vitality with any degree of certainty for more than a year or two.

Here then is the difficult point for the botanist - to decide between the probabilities of a mere variation occasioned by some unknown cause - or of a transportation or preservation of the seeds in methods similar to those I have ^{mentioned} -

Perhaps the only way to settle the matter now is to carefully watch the growth of both plants for a number of years - I am looking with a good deal of interest to the report from them when the plants begin to bloom again - Should the white plants be as abundant this year as they ~~were~~ last it will go a good way to show ~~them~~ to belong to a separate species - But if on the other hand they are again rare it will almost establish them as a variety - occasioned by some peculiarity of the ^{season} ~~climate~~.

But ^{larger} ~~dropping~~ this plant for the present ^{you must} ~~you must~~ is an example of the perplexities of the natural-
-ists ~~meets with~~

In the same flora before mentioned is found the little early Spring plant - the *Hepatica* - or as it is popularly called the "Liver-leaf". Those of you who are acquainted with the plant remember the shape of its leaves - but for the benefit of those who have not seen the plant I will describe them -

They are three pointed or as we would describe them Botanically - three lobed - Occasionally the number of lobes is increased to five tho' this is comparatively rare -

Now a difference has been observed in the shape of the lobes -

In some plants the lobes are sharp ~~and~~ that is they run to a point - while in others they are rounded -

The variation I mentioned before that of having five lobes instead of three is also found to occur generally with the sharp lobed plants - The flowers of each - are alike or at any rate very nearly so.

The question now for the Botanist is this -

"Shall we call these plants varieties of the same species - or are they really distinct" - Some Botanists ^{have} decided one way and ^{others} ~~some~~ the opposite. How can this be finally decided - It can not be done in one year - neither can it be well done by one person

A number of persons must observe
 the plants during several years, care-
 fully noting the appearance of
 both plants - noting any differences
 they may possess - such as a
 difference in time of blooming - in
 the soil they grow in - in the shape
 of ~~any~~ ^{or number} of the parts of the flower,
 and particularly any variations from
 the two types of leaves which might in-
 dicate a gradation from the round
 lobed leaf to the sharp lobed -