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OF
THE FIRST SYMPOSIUM
ON
THE BOTANY OF THE BAHAMAS

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Bahamian Field Station
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A FLORISTIC COMPARISON

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A number of years ago I had the opportunity to do a floristic study on a mixed mesophytic community in central Indiana and more recently in April and early May 1982, to study the flowering plants of San Salvador Island, Bahamas. When the announcement of the First Botanical Symposium on the Botany of the Bahamas came I thought it might be interesting to compare the two areas floristically rather than to give only a species listing of what was seen on San Salvador.

The methods used in both studies were rather simple. The temperate community, a 60 acre, 20 year second growth tract located in Tippecanoe County, Indiana was traversed at least biweekly beginning in early March and continuing through October. Any species seen to be in flower was collected, pressed, and identified using Grays' Manuel of Botany 8th edition. Data were compiled embracing the number of families, genera and species collected (only non cultivars were collected).

On San Salvador daily collections were made during the period of 16 April to 7 May 1982. The collecting area was somewhat limited since at that time there was a gasoline shortage on the island and travel distance was restricted to foot or bicycle coverage or to an occasional hitched ride with a student group that was at the CCFL Station. Specimens were collected, pressed and identified using both Long and Lakelas' A Flora of Tropical Florida and D. S. and H. B. Corrells' The Flora of the

Bahama Archipelago. In addition Dr. Robert Smiths' Field Guide to the Vegetation of San Salvador was used as a check list. After being mounted and labeled representative specimen sheets were deposited in the CCFL Station herbarium.

The great flora diversity of the mixed mesophytic community and the limited flora of scrublands such as on San Salvador have long been noted and described (Braun 1974). In addition, the flowering phenology in temperate areas has been related to seasonal temperature, photoperiod, and moisture changes. Figure 1 indicates this phenological change as seen in the mixed mesophytic community of central Indiana. The flowering season begins in early March, builds to a slight peak in early May, declines in mid-May, then increases to a maximum in mid-June, declines again with another slight peak in late July and early August.

If one looks at the families represented in the early spring one sees the Cruciferae and Ranunculaceae represented by the greatest number of species and genera. In the late summer and early fall the Compositae are the most abundant. During the restricted time period (16 April to 7 May) as seen on San Salvador one sees a floristic flowering diversity of 20 families, 34 genera and 40 species. The Cruciferae with 5 genera and 8 species and the Ranunculaceae with 5 genera and 6 species were the most abundant. Twelve (12) families were represented by a single genus and species. Table 1 indicates the families and the number of genera and species found in the Indiana Site during the restricted period.

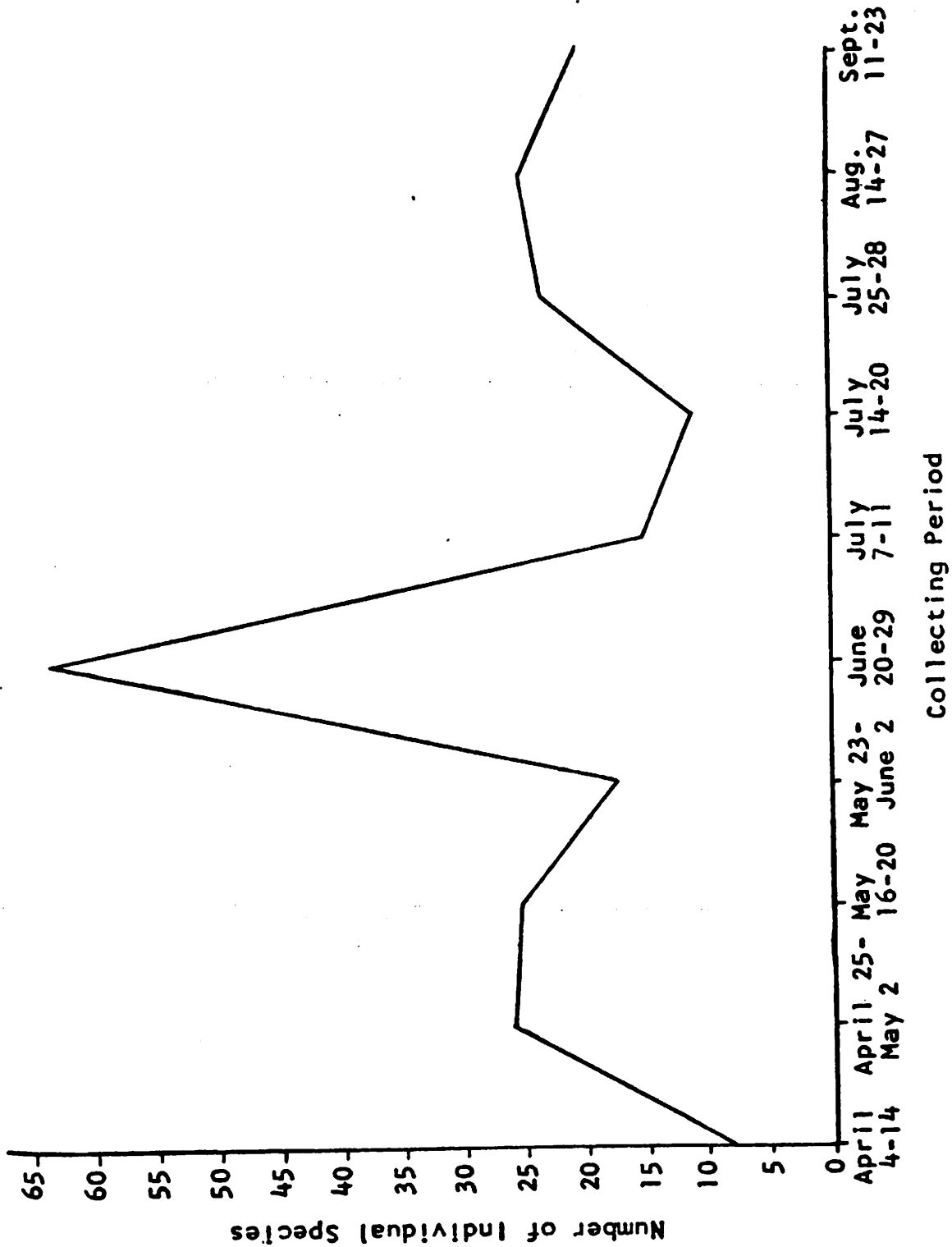


Figure 1: Flowering phenology as seen in a mixed mesophytic community - Tippecanoe County, Indiana

Family	# Genera	# Species
Araceae	1	1
Berberidaceae	1	1
*Compositae	3	3
Cornaceae	1	1
*Cruciferae	5	8
*Cyperaceae	1	1
Geraniaceae	1	1
*Labiatae	1	1
*Leguminosae	1	1
Liliaceae	3	3
Oxalidaceae	1	1
*Papaveraceae	2	2
Polemoniaceae	1	1
*Portulacaceae	1	1
Ranunculaceae	5	6
Rosaceae	2	2
Saxifragaceae	1	1
*Scrophulariaceae	1	1
Violaceae	1	2
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20 Total	34	40

* Common to both sites.

Table 1. Families and number of genera and species found in a mixed mesophytic community - Tippecanoe Co., Indiana 16 April to 7 May.

When one considers flowering phenology in areas such as San Salvador one generally assumes it is related to some environmental factor other than temperature (e.g., moisture periods, photoperiod etc).

During the study period on San Salvador (16 April to 7 May) 46 families, 103 genera and 112 species were collected. The Compositae were the most abundant with 13 genera and 14 species while the Leguminosae were represented by 9 genera and 14 species. Of the 46 families 24 were represented by a single genus and species. Only 8 families were found to be in common for both sites; but no genera or species were found in common. Table 2 indicates the families and number of genera and species found on San Salvador. Figure 2 graphically represents the diversity of the two communities.

<u>Family</u>	<u># Genera</u>	<u># Species</u>
Acanthaceae	2	2
Agavaceae	2	2
Aizoonaceae	1	1
Amaranthaceae	1	1
Anacardiaceae	1	1
Apocynaceae	4	4
Asclepiadaceae	3	3
Bataceae	1	1
Bignoniaceae	2	2
Boraginaceae	4	4
Bromeliaceae	1	1
Caricaceae	1	1
Combretaceae	3	3
*Compositae	13	14
Commelinaceae	2	2
Convolvulaceae	4	7
*Cruciferae	2	2
*Cyperaceae	1	1
Euphorbiaceae	6	7
Gentianaceae	1	1
Goodeniaceae	1	1
Gramineae	3	3
*Labiatae	2	2
Lauraceae	1	1
*Leguminosae	9	14
Malpighiaceae	2	2
Malvaceae	2	2
Myrtaceae	1	1
Palmae	1	1
*Papaveraceae	1	1
Passifloraceae	1	2
Polygonaceae	1	1
Polypodiaceae	1	1
*Portulacaceae	1	1
Punicaceae	1	1
Rhizophoraceae	1	1
Rubiaceae	5	6
*Scrophulariaceae	2	2
Solanaceae	1	1
Sterculiaceae	2	3
Surianaceae	1	1
Tiliaceae	1	1
Turneraceae	1	1
Typhaceae	1	1
Verbenaceae	4	4
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46	Total	112
* Common to both sites.		

Table 2. Families and number of genera and species found in the scrubland community of San Salvador, Bahamas 16 April to 7 May.

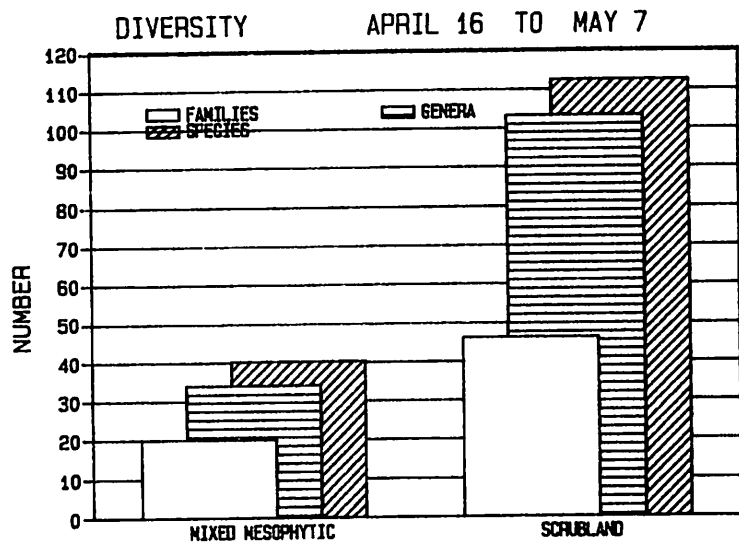


Figure 2. Floristic phenology as seen in a mixed mesophytic community of central Indiana and the scrubland community of San Salvador, Bahamas 16 April to 7 May.

If one expands the time period to include the entire year one sees the flora in the mixed mesophytic community represented by 82 families, 212 genera, and 327 species. Using Smith' check list as a year comparison for San Salvador, one finds 106 families, 337 genera, and 435 species. Figure 3 graphically represents the comparison of this yearly diversity.

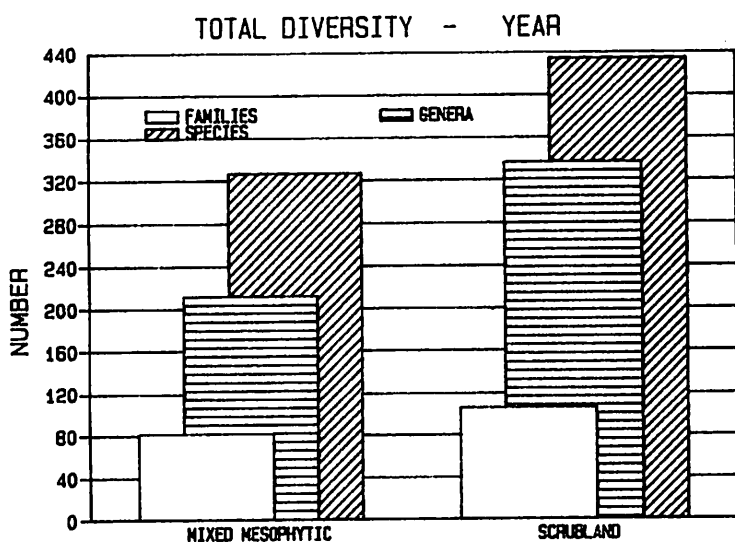


Figure 3. Yearly floristic diversity as seen in a mixed mesophytic community of central Indiana and the scrubland community of San Salvador, Bahamas.

In conclusion this comparison of floristic diversity indicates that the scrubland community of San Salvador is as diverse, if not more so, than the mixed mesophytic community of central Indiana. All three taxonomic levels of family, genus, and species are represented by a greater number in the San Salvador flora than in the central Indiana. Perhaps from these data, and with further investigation, we should re-examine our ideas with regard to the floristic diversity represented in the scrubland and mixed mesophytic communities.

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