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POLLENS WHICH CAUSE HAY FEVER IN SOUTH CENTRAL TEXAS*

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FORT SAM HOUSTON, TEXAS

THERE are numerous plants growing in south central Texas which are given credit for causing the distressing symptoms of hay fever, asthma, and other allergic conditions. The vegetation in this part of Texas is extremely prolific during nine months of the year and par-



Fig. 1.

ticularly so after the spring and fall rains. The period from the middle of December until the middle of March is the low season for vegetation. During this period frosts and freezing temperatures are frequent.

During the years 1927, 1928, and 1929 at the Asthma and Hay Fever Clinic, Station Hospital, Fort Sam Houston, we have had the opportunity to test hundreds of hay fever sufferers. We have found that, although there are a great number of pollens which are accused of causing hay fever, in reality there are comparatively few. In fact, our experience shows that by far the greatest amount of suffering is

*From the Asthma and Hay Fever Clinic, Station Hospital, Fort Sam Houston.

caused by pollens from the following plants: viz., the grasses, the ragweeds, the careless weed, plantain, and mountain cedar. We do not contend that some of the minor pollens do not cause hay fever, but we do contend that they are the exception rather than the rule. The following is a list of plants credited with causing hay fever in this part of the state. Those which we have definitely hooked up as offenders are termed major offenders while the others are termed minor offenders.

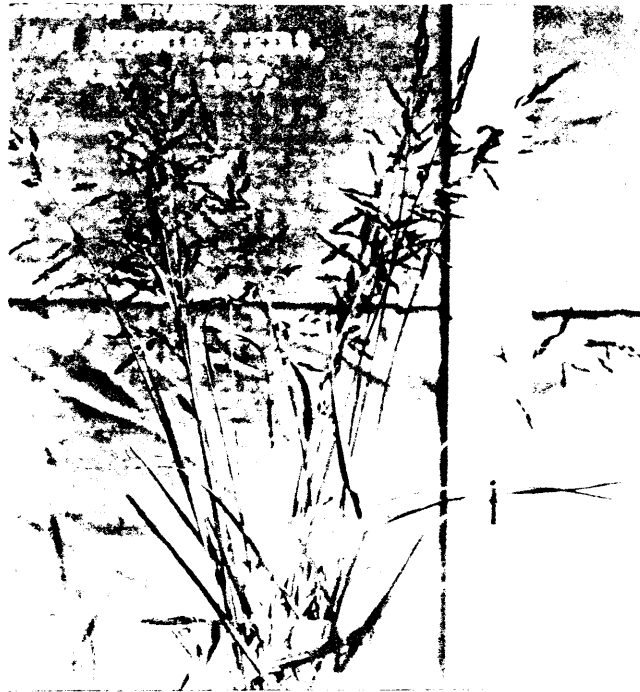


FIG. 2.

Major Offenders

The grasses, principally Bermuda and Johnson.
 The ragweeds, both giant and dwarf.
 The careless weeds, especially *Amaranthus retroflexus*, *A. palmeri* and *A. blitoides*.
 Plantain, of which there are a number of varieties, the *B. occidentalis* being the most common.
 Mountain cedar.

Minor Offenders

Cottonwood. Russian thistle.
 Shad scale. Annual saltbush.
 Mesquite. Western water
 (Algaroba). hemp.
 Ligustrum. Marsh elder.
 Rabbit bush. Certain other trees.
 Sheep sorrel.
 Yellow dock.
 The sages.
 Cocklebur.

The major offenders only will be taken up somewhat in detail.

The Grasses.—Of the grasses, there have been over one hundred species already identified and classified within the city limits of San

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TABLE I

SUMMARY OF THE HAY FEVER CASES FOR THE SEASONS 1927, 1928, AND 1929, AT THE ASTHMA AND HAY FEVER CLINIC, STATION HOSPITAL,
FORT SAM HOUSTON, TEXAS
NUMBER OF PATIENTS SENSITIVE TO MAJOR OFFENDERS

	1 — <i>The Grasses.</i>	2 — <i>The Ragweeds.</i>	3 — <i>The Careless Weeds.</i>	4 — <i>The Plantains.</i>	5 — <i>Mt. Cedar.</i>
	SINGLE SENSITIVITY	DOUBLE SENSITIVITY	TRIPLE SENSITIVITY	QUADRUPLE SEN.	
1927	1	1-2	1-3	1-2-3	1-2-3-4
1928	13	18	4	0	0
1929*	17	12	3	0	0
	14	11	2	1	2*
					1

*To September 1 only.

TABLE II

PERCENTAGE OF PATIENTS SENSITIVE TO MAJOR OFFENDERS

	GRASS	RAGWEED	CARELESS WEED	PLANTAIN	MT. CEDAR
1927		44.0%	16.0%	Not used	Not used
1928	40%	35.0%	23.2%	Not used	0.8%
1929*	35%	36.7%	18.7%	3.9%	5.5%

*To September 1 only.

Antonio. And this is probably only a start. The principal grasses from a hay fever standpoint are Bermuda and Johnson.

There are two almost distinct grass seasons. The first starts about the middle of March and continues on into July, depending upon the amount of spring rains. After the first of July and until early fall, rains are the exception. During this dry season the grasses die down and their pollen content in the air drops comparatively low. Usually between the first and fifteenth of September the first fall rains come. This rain brings the grasses to renewed life, and they again pollinate in profusion until frost. This usually occurs about the middle of December. During the dry summer period (July and August) there



Fig. 3.

is, of course, some grass pollination, particularly in the cities where Bermuda is used almost exclusively for lawn grass and is watered regularly.

The Ragweeds.—Both the giant and dwarf ragweed are present in this vicinity. The giant variety because of its great size is much more conspicuous than the dwarf variety, but I believe that plant for plant, the dwarf will greatly outnumber the giant. The giant variety blossoms much earlier than the dwarf. Usually we do not expect much trouble from ragweed until after the first fall rains. In 1929, however, probably due to the excessive spring rains, the giant ragweed was first seen in blossom on July 29. The dwarf ragweed did not get into full blossom until after the first of October. From the time of the first blossoms of the giant ragweed until after some rain during the

first part of September it struggled against the drought to keep its head up. Its pollination during this period was extremely limited. Usually there is practically no ragweed pollination until the first part of September. From then on until frost, this plant causes a great deal of suffering.

The Careless Weeds.—A number of varieties of the *Amaranthus* are present and vary from the *A. retroflexus*, which grows as high as eight feet to the *A. blitoides*, which is the small creeping variety. The careless weed begins to pollinate around the first of May and continues

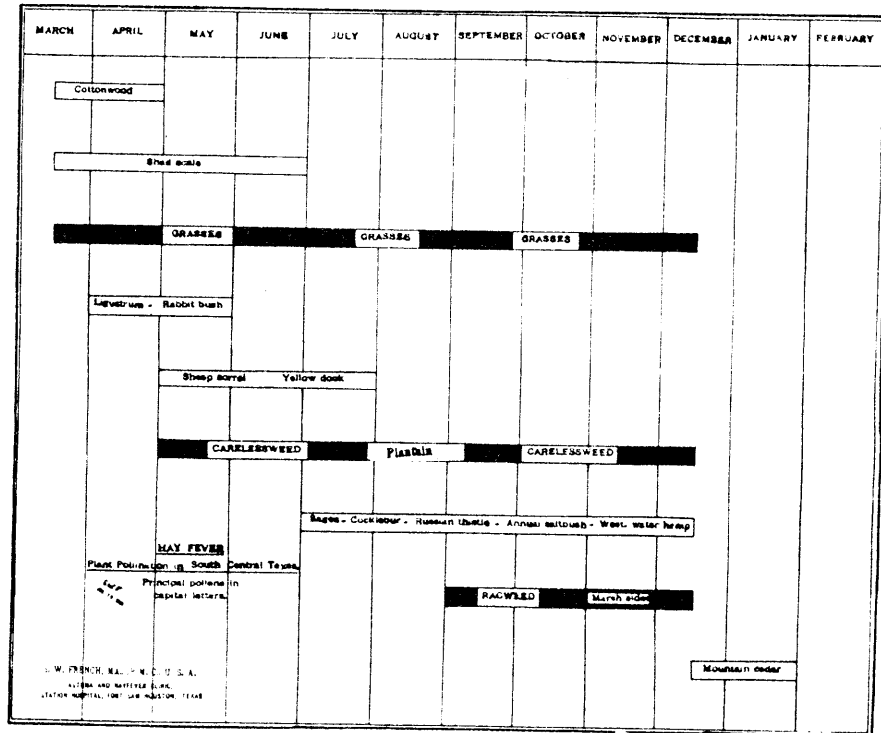


Fig. 4.—Duration of pollination of hay fever-producing plants in south central Texas.

until frost. Like the other offenders it is not so prolific during the dry season but pollinates with renewed vigor after the first fall rains.

The Plantains.—There are a number of plantains in this vicinity. None of them appear to be either the typical English (narrow leaf) or the typical American (broad leaf) variety. The most common variety seems to be a combination of the two. It has more the leaf of the English and the flower of the American plantain. It blossoms at about the same time as the careless weed. In 1929 no plantain was found after the first of July but the previous year (1928) it was found after the fall rains. This plant will have to be observed further before we can classify it as a short or long season offender.

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A tentative pollination chart (Fig. 4) for the vicinity of San Antonio is included with this report, together with photographs of some of the major offenders gathered within the city limits.

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