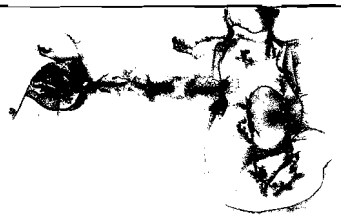

UNITED STATES DEPARTMENT OF AGRICULTURE
Science and Education Administration
Plant Genetics and Germplasm Institute

FOREIGN TRAVEL REPORT

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Mexico, United States (California)
February 3 - April 18, 1979

OBJECTIVES: To procure plant samples for preliminary anticancer screening with emphasis on genera new to the program, medicinal species and root, bark and fruit samples of arid land shrubs in general.

SUMMARY: For both Mexico and U.S., 231 samples were collected. About 90 percent appear to meet current NCI guidelines. About 18 percent of the Angiosperm genera are new to the program. Forty-four percent of the woody plant samples consist of roots, bark and fruit in contrast to seven percent obtained by past contractors who have collected elsewhere in the Sonoran Desert.

DETAIL: This botanist has suggested that arid-regions are likely to be the most productive for finding novel anticancer agents in plants. Preliminary studies support this contention.

In July 1978, a cross-check between the National Cancer Institute's (NCI) computer records and floras covering western U.S. and the Sonoran Desert in Mexico revealed many untested genera centering in Baja California and limestone mountains along the California-Nevada State line.

The laboratory literature dealing with North American medicinal plants was also reviewed to select for those that met certain medicinal and taxonomic criteria. Medicinal plants that passed were further reviewed against NCI records to eliminate those already known to be active or extensively screened. For many that had been represented in the NCI program, it was discovered that the plant part often specified in folk medicine had not been tested, especially noted were roots. This led to a more indepth review of past Sonoran Desert collections obtained by other contractors. Only seven percent of their woody plant samples consisted of roots, bark or fruits.

Additionally, in January 1979, new NCI guidelines detailed many unwanted genera and species for future screening. In many areas of Baja California, as elsewhere in the world, these guidelines eliminate nearly half of the vegetation that might be sampled randomly. For California, this would cover more than 80 percent in many places.

Collecting and export permits were secured through the Agricultural Attache at the American Embassy in Mexico City.

Arrangements to rent a 1974 Jeep Wagoneer from the GSA Motor Pool were made by Mr. Allen here at Beltsville. Unfortunately, this vehicle was not dependable. The engine died on six occasions enroute to San Diego. After this was corrected, a tire blew out while driving on a major Mexico highway. Then all gasoline leaked out of the tank when I left the truck parked on a hill during a two hour collecting spree. During my first two weeks of travel, this vehicle was in the repair shop most of the time but fortunatly one of our suppliers in nearby San Diego was willing to assist me and use his truck for field work. The GSA vehicle developed further mechanical problems which led to its return to Yuma. The GSA motor pool personel located a new Blazer from a commercial source that turned out to be problem free for the remainder of my trip.

MEXICO-BAJA CALIFORNIA -February 9-14, 20-March 29:

My base of operations centered from the La Posada Hotel in La Paz. The personel there extended their courtesy in allowing me to leave field equipment and drying samples without worry of potential loss. Three-five day excursions were undertaken to various places. Most collecting centered in the central and south regions.

My work in Baja California terminated rather abruptly when I received notice that my father, in northern California, had only a short time to live. He was a victim of cancer on March 30. The American Embassy in Mexico City and the American Consulate in Tijuana assisted in shipping the samples to our laboratory that I had left at La Paz.

One hundred and thirty-five collections that included 171 samples were obtained in Baja California. Preliminary identifications reveal 101 genera of which 14 percent are new to the cancer program. Also sampled was one new family - Achtocarpaceae. About 90 percent of the samples appear acceptable to current NCI guidelines. Some accidental (unwanted) collections include species of Maytenus, Hyptis, Phoradendron, Zanthoxylon, Jatropha and Ipomoea. Fresh and dry weight data also were recorded for most samples.

CALIFORNIA March 20-April 18:

Having to bring my work to California earlier than originally planned, I concentrated on low elevation taxa rather than the desired limestone taxa at high elevations in the Mojave Desert Region. Sixty samples were collected. Represented are 16 genera in nine families of Bryophytes and 24 genera of Angiosperms. Eighty-eight percent of Bryophyte genera and 20 percent of the Angiosperm genera are new to the program. High-interest medicinal plants are represented in ten percent of the samples.