J. Ethnobiol. 3(1):1-13 May 1983

THE ROLE OF PLANTS FOUND IN THE MEXICAN MARKETS AND THEIR IMPORTANCE IN ETHNOBOTANICAL STUDIES

ROBERT A. BYE, JR. and EDELMIRA LINARES
Jardín Botánico, Universidad Nacional Autónoma de México
04510 México, DF

ABSTRACT.—The availability of plants in the Mexican markets has been important in the past and continues to be important today. These markets can provide much information on the ethnobotanical process of plant-people interactions and relationships. An introduction to our current work is presented. Eleven factors which influence the availability of plants in the "tianguis" market are discussed briefly. Methodologies for the market, the field and the laboratory are outlined. Examples are presented for the following components of the ethnobotanical process: temporal partitioning, spatial partitioning, flow patterns, and ecological and evolutionary factors. Most of the data are derived from the Mercado de Sonora of Mexico City, Distrito Federal (a major market), and from Santa Catarina del Monte, México (a source area). Tentative conclusions are: (1) plants in the markets are the product of intensified interactions between people and plants (e.g., about 75% of the market plants are derived from human altered environments); (2) the actual contribution of the plants from the source area to the major market is considerably below its potential and is related to spatial partitioning of the source areas in the major market; (3) markets will continue to be important in Mexico's future in order to provide the people with alternative choices in the diverse plants and plant products available.

INTRODUCTION

The markets have long been a part of Mexican history. The pre- and early post-Conquest markets of central Mexico have been described by such early observers as Cortés (1981), Diaz de Castillo (1977), and Sahagún (1979) and have been analyzed by contemporary scholars (Garibay 1961; Benítez 1962). In Mexico City, representations of those early market scenes can be seen in Diego Rivera's mural, "El México Precortesiano: Tenochtitlan", located in the Palacio Nacional (Taracena 1981), and in the Museo Nacional de Antropología (Ramírez V. et al. 1968). Peterson (1959:217) credits the market as "one of the most impressive survivals of ancient Mexico". Nearly 400 years later, similar scenes (Fig. 1) can be found throughout Mexico. Many plant species sold or exchanged in the markets of the past are still found today. These markets are fertile grounds for ethnobotanical studies.

The social sciences have benefited from market studies as reviewed by Whitaker and Cutler (1966). To a lesser degree, the biological sciences have benefited from such studies. Botanists of the U. S. Department of Agriculture, such as Edward Palmer (Bye 1979) and J. N. Rose (1899), used markets as a source of information and specimens of useful Mexican plants. Other botanists have discovered new species of edible plants, such as *Chenopodium nuttalliae* Safford (Safford 1918) and *Pinus maximartinezii* Rzedowski (Rzedowski 1964), in some Mexican markets. The importance of markets in tracing the history of cultivated plants and in the analysis of archaeological plant remains is supported by the work of economic botanists, Whitaker and Cutler (1966). These two botanists recognized the untapped wealth of plants in markets and suggested more careful studies. Their comments on the need for "carefully documented collections and records of the markets" (Whitaker and Cutler 1966:6) anticipated our present research.

Ethnobotany can be defined as the study of the biological and ecological bases of interactions and relationships between plants and people over evolutionary time. *Interactions* refer to mutual influences of plants and people upon each other. *Relationships* refer to associations between plants and people which are usually one-sided (e.g., a nomenclatural system of plants when applied by humans has no direct effect upon the plant populations). One focus in ethnobotanical studies is the process of these interactions and relationships.

FIG. 1—Mexican market scenes. (1a): Mercado de Sonora, Mexico City, DF, with a stand of fresh medicinal plants from San Juan Tepecoculco, near Ozumba, México. (1b): Mercado La República, San Luis Potosí, SLP, with a view of the dry medicinal plants. The rolls of small bundles of medicinal herbs are suspended from the ceiling while the cut dried plants are in the sacks on the floor.

Markets represent an intensified interaction between people of different socio-economic groups and special plants. People require plants to fulfill certain biological, cultural and economic needs. When removed from daily contact with the plant sources, people depend upon an organized exchange structure, such as a market, to obtain the plants. The market allows for higher intensity of selection of plants (due to economic constraints) and eventually leads to more intensified interactions between the plant populations and the people in direct contact with the plants. In addition, the presence of plants in the market over long periods of time suggests that these plants produce effects which are expected by the consumers. As a result, pressure on certain plants and plant populations is increased. Certain plants are continually tested, evaluated, and demanded because of their recognized values, properties, and effectiveness.

METHODS

The methodology that is used to obtain the information at various markets varies depending upon local conditions. Because this paper deals mostly with the Mercado de Sonora in Mexico City, we will describe the methodology we use there.

Market.—The focus of the study is on fresh plants that are sold for medicinal and/or food purposes. These are collected on a regular basis. In some cases, dry plants are also acquired. During certain seasons, plants for other purposes (e.g., ornamental) are collected. Each week, a visit is made to the market early in the morning. The day of the week varies. The "días de plaza" in Mercado de Sonora when there are more vendors are Tuesday and Friday. Information on the plants present and their condition is recorded. Also for each plant collected, information is requested from the vendor and is recorded in notebooks and with a tape recorder (when possible). The information includes: (a) plant name(s); (b) purpose(s) and use(s); (c) preparation(s); (d) qualities (e.g., "hot", "cold", flavor, etc.) attributed to the plant; (e) source area; (f) whether the plant is gathered or cultivated; (g) type of plant community and habitat from which the plant came; (h) price of the unit purchased; and (i) type of vendor (e.g., resale vendor, collector-vendor, etc.). If consumers are present, we also ask questions related to points a, b, c, and d above.

In order to document the plants, three steps are taken. First, specimens (usually in the units (e.g., "manojos" or handfuls) that they are sold normally) are purchased after bargaining the price. The material that can be pressed in a standard plant press is made into herbarium specimens. Bulky material is dried or placed in a liquid preservative and is called a case specimen. Both types of specimens serve as original voucher material.

Second, in the case of seeds, stems, and roots, additional material is purchased for propagation. The propagation specimen is grown to produce more taxonomically important parts (e.g., flowers) and to serve as the basis for making a corroborative voucher specimen (Lee et al. 1982).

The propagation specimen is used to increase the number of plants, which are then integrated into the living collection of the Jardín Botánico, Universidad Nacional Autónoma de México (UNAM).

Third, color slides and black and white photographs are made of the market specimens and living collections.

Field.—After contacts are made with collectors and vendors in the major market, visits are made to the field and to local markets. The purpose of these visits is to identify the areas and the plant populations from which the market plants are derived. Information and documentation with specimens and photographs from the field are similar to the points outlined above for markets. In some cases, the herbarium specimens from the field can serve as corroborative specimens for the market specimens. In addition, local ethnobotanical and ecological information is recorded.

Laboratory.—The specimens are identified using the available literature and the specimens in the Herbario Nacional (MEXU) of UNAM. Duplicate specimens of certain groups are sent to taxonomic specialists for verification. Each specimen carries that information gathered in the market or in the field.

Proper deposition of the documentation material is important. The first set of original voucher specimens and corroborative voucher specimens is deposited at MEXU. Duplicate specimens are exchanged with other herbaria. Living collections are part of the Jardín Botánico, UNAM. Photographs and notes (from notebooks and transcripts) are deposited in the Jardín Botánico, UNAM. Materials for analysis and experimentation are collected for collaborating institutions interested in anatomical, chemical and nutritional studies. These materials have associated voucher specimens.

PLANTS IN MARKETS

Many supply and demand factors affect the presence of plants in the markets. These basic factors are subject to biological and ecological influences.

Factors on the supply side that are of our interest are:

(1) The availability of fresh plants (Fig. 2a) in the catchment area (i.e., the area from which the plant originates and can be transported to the main market without loss of its properties). These plants may be gathered from wild populations or from anthropogenic populations. Also, these plants may come from cultivated populations of non-domesticated or domesticated plants.

(2) The availability of dry plants from previous harvests (usually in small bundles or loose pieces; Fig. 2b, 2c). These processed dried plants are made from seasonally fresh material from the catchment area and stored. They can be sold when the fresh plants are not available. Also, these dried plants are imported from areas outside the catchment area. They are dried in fragments or small bundles which allow for easy transport and sale in large quantities.

(3) The compensation. The financial or other returns that the collectors and vendors receive must compensate their expenses. Also some plants may or may not be gathered and sold due to ethical reasons (e.g., "toloache" *(Datura stramonium* L.) is considered by some people to be a plant of the devil and because of this is not sold by them, or it is sold with certain precautions).

Factors on the demand side that are of our interest are:

(1) The fulfillment of certain purposes, such as medicinal and edible plants that are part of certain social practices, ethnic beliefs, or customs. "Muitle" *(Jacobinia spicigera* (Schlecht.) L.H. Bailey) is drunk as an invigorating tea by outdoor laborers; "papitas" *(Solanum* spp.) and "romeritos" *(Suaeda diffusa* S. Watson) are frequently eaten during the Lenten season; and "gordolobo" *(Gnaphalium* spp.) is consumed as a tea to alleviate coughs.

(2) A satisfactory level of effectiveness. The plant or plant product produces results which are acceptable to the consumers.

(3) The economic price. The plant is affordable by the consumers.

(4) The alternatives. If certain plants or their products are not available due to seasonality, limited supply, or unaffordability, other plants can be used as substitutes. Thus choices or options are available to the consumers. Certain plants may be preferred under specific conditions while others are used at different times.

(5) The standard plants all year round. Certain edible plants, such as "nopal" *(Opuntia* spp.), ritual cleansing plants, such as "piru" *(Schinus molle* L.), and medicinal plants, such as "manzanilla" *(Matricaria chamomilla* L.), are in demand all year round and are usually in constant supply all the time.

(6) The standard plants by seasons. Other plants may be needed on a seasonal basis. "Fresno" *(Fraxinus* spp.), a "cool" plant, is consumed more during the warm season when the leaves are also available.

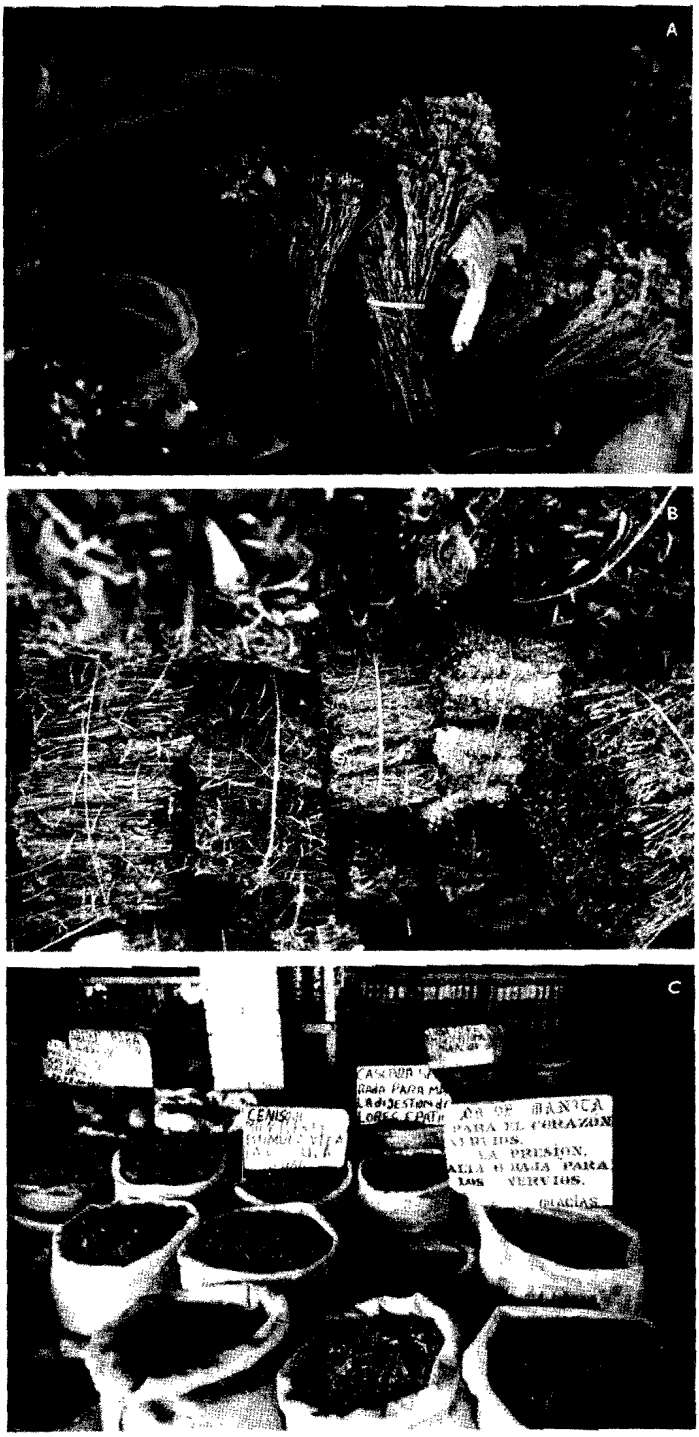

FIG. 2—Forms of medicinal plants found in the markets. (2a): Bundles ("manojos") of fresh plants *(Tagetes lucida, Gnaphalium* sp., and *Chenopodium graveolens)* in Mercado de Sonora, Mexico City, DF. (2b): Small bundles ("manojos") of dried medicinal herbs tied into rolls in Mercado La República, San Luis Potosí, SLP. (2c): Sacks of pieces of dried medicinal plants in Mercado La República, San Luis Potosí, SLP.

(7) The requested plants. Some plants are sought specifically because of their properties. "Ortiga ancha" *(Urtica dioica* L.) from Ozumba, México, is requested by a spiritualist for ritual cleansing and bathing because the plants from this region are said to be more "carnivorous" than plants from other regions.

(8) The opportunity. Plants which the collector/vendor happens to include in his/her stand for no specific reason may be of interest to the consumers. Also, the consumers may be looking for new plants to try. Thus, the choice for a particular plant may be a matter of unexpected demand.

CATEGORIES

Many categories of plants can be identified in the market. Artificial divisions are often made by ethnocentric uses such as edible, condiment, medicinal, religious, and ornamental. Although some markets and some stands may be labeled as specialist in one use category or another, our studies indicate that any one stand contains plants of two or more artificial divisions. Also, a plant, such as "pericón" *(Tagetes lucida* Cav.), may be considered a food additive by one consumer, a medicine by another, and an important element in religious rituals by a third.

The parts of the plants (Fig. 3) found in the market are also other variables in assigning categories. They may include: edible fungi[1]; medicinal ferns, e.g., "culantrillo" *(Adiantum capillus-veneris* L.); medicinal roots, e.g., "matarique" *(Senecio peltiferus* Hemsley); medicinal steams, e.g., "tumba vaquero" *(Cissus sicyoides* L.); condiment leaves, e.g., "hoja santa" *(Piper auritum* HBK.); edible leaves, e.g., "quelite cenizo" *(Chenopodium berlandieri* Moq.); medicinal flowers, e.g., "flor de manita" *(Chiranthodendron pentadactylon* Larr.); edible and medicinal fruits, e.g., "xoconochtle" *(Opuntia,* subgen. *Opuntia);* and magical seeds, e.g., "colorín" *(Erythrina* spp.).

PROCESS

We would like to consider some, but not all, the components that make up the ethnobotanical process in the Mexican markets. Although our studies cover various parts of the country, we will use data from one of the most important markets located in Mexico City. From this and other markets we plan to prepare some generalizations about the ethnobotanical process of markets and to construct hypotheses that can be tested in other markets.

The Mercado de Sonora is located in the large and old La Merced complex in central Mexico City (Valencia 1965; Ryesky and Paniagua 1979). It is a "tianguis" market where the plants are sold by individuals or families. These vendors often gather the plants from the fields and towns (e.g., Ozumba, Ajusco, Santa Catarina del Monte) in the mountains surrounding the city (Mexico City is on the trans-volcanic mountain belt of south-central Mexico). The potential vegetation of the areas is coniferous-oak forests and grasslands (Rzedowski 1978). It is located in the basin of the Valle de México which is surrounded by volcanic peaks. Our studies in the Mercado de Sonora were initiated in May 1981 and were intensified in September 1981. A complete list of the species of plants encountered in our market studies is not reported here. Future publications will present more details on the plants and their ethnobotanical importance.

Temporal partitioning.—The presence, richness, and abundance of plants vary with time of day, day of the week, and season of the year (Fig. 4). Some cultivated plants, such as the edible "nopal" *(Opuntia* spp.), and the cultivated and adventive plants such as "pirú" *(Schinus molle* L.), a common base for "ramos" for ritual cleansing, are available and abundant year round. "Flor de manita" *(Chiranthodendron pentadactylon* Larr.), a highly prized and effective heart remedy, is available fresh during the winter months. Leaves of "fresno" *(Fraxinus* spp.) are considered "cool" and are used in baths. They are found in the market during the warm late spring and early summer months. "Pericón" *(Tagetes lucida* Cav.), an aromatic herb used as a food additive in maize dishes and

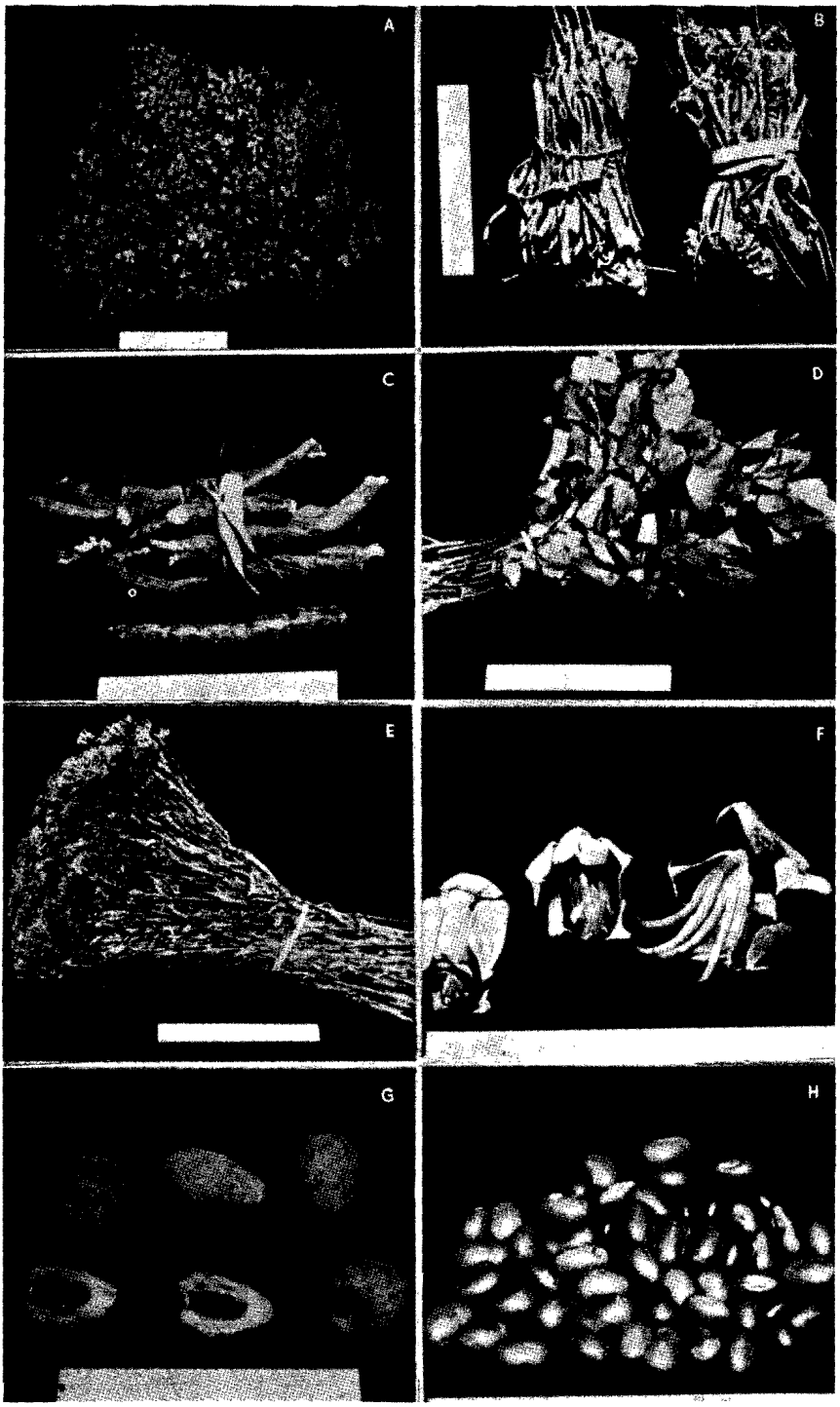

FIG. 3.—Examples of some market plants. The white scale is equal to 15 cm. The number following each name refers to the Bye & Linares collection number of the voucher specimen. (a): *Adiantum capillus-veneris* (11,031); (b): *Senecio peltiferus* (10,286); (c): *Cissus sicyoides* (10,726); (d) *Chenopodium berlandieri* (10,596); (e) *Tagetes lucida* (10,541); (f): *Chiranthodendron pentadactylon* (10,252); (g): *Opuntia*, subgen. *Opuntia* (10,962); (h): *Erythrina* sp. (10,733).

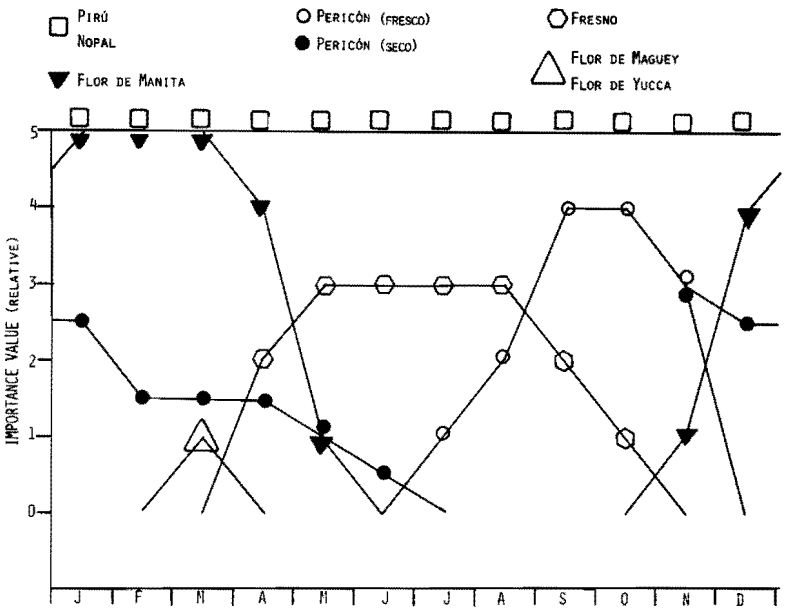

FIG. 4.–Temporal partitioning of some plants in the Mercado de Sonora, Mexico City. The importance value is relative and ranges from 0 (absent) to 5 (abundant). The year is divided into months from January (J) through December (D). The symbols are: open square (□): *Opuntia* spp. and *Schinus molle;* inverted, filled triangle (▼): *Chiranthodendron pentadactylon;* open triangle (△): *Agave* spp. and *Yucca* spp.; filled circle (●): fresh *Tagetes lucida;* and open hexagon (⬡): *Fraxinus* spp.

consumed as a tea to treat stomach aches, is a summer and early fall flowering herb which is available fresh during that period. Bundles also are dried and sold during the rest of the year. Not all plants have such long durations in the markets. The edible flowers of "maguey" *(Agave* spp.) and "yuca" *(Yucca* spp.) are available only during the few weeks of spring.

Spatial partitioning.–Variations in the presence, richness, and abundance of plants also occur over space. Some types of plants are grouped in one section of the market while other types of plants are seldom seen in nearby stands but are dispersed throughout. Another type of spatial partitioning is the geographic distribution of the source areas of the plants in the market. Although many of the plants grow in all the major source areas, only a part of the plants come from one area while other plants come from other areas.

The 150 medicinal plants found in the Mercado de Sonora are compared with the 114 medicinal plants of Santa Catarina del Monte, which is located about 50 km to the east in the state of México. There are 85 species that are common to both the main market and this source area. These 85 plants represent the *potential* contribution of Santa Catarina del Monte to the Mercado de Sonora, i.e., ca. 57% of the plants sold in this main market could come from this one source area. However, the *actual* contribution of medicinal plants from Santa Catarina del Monte to the Mercado de Sonora is only 38 species, i.e., ca. 25% of the plants sold in the main market come from this particular source area. The other plants come from other source areas.

Flow patterns.–The process of flow of plants from the source plant populations to the ultimate consumer can reveal many biological and cultural factors which are important in plant-people relationships and interactions. Our initial attempt to identify the path of movement of plants is presented in Fig. 5 and 6. Our objectives include: (1) the

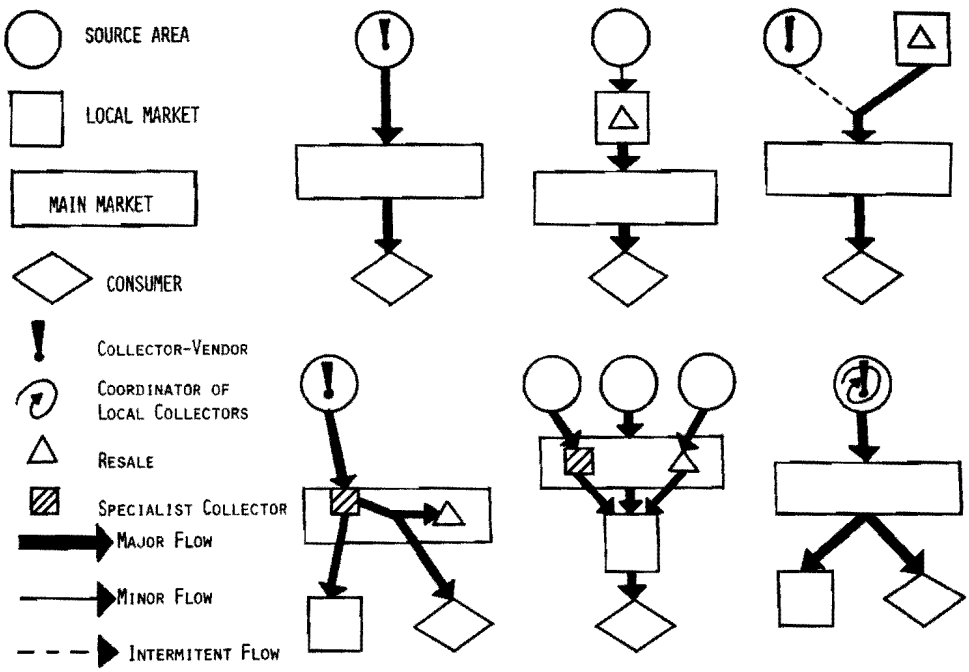

FIG. 5.—Six common flow patterns of market plants with explanations of the symbols.

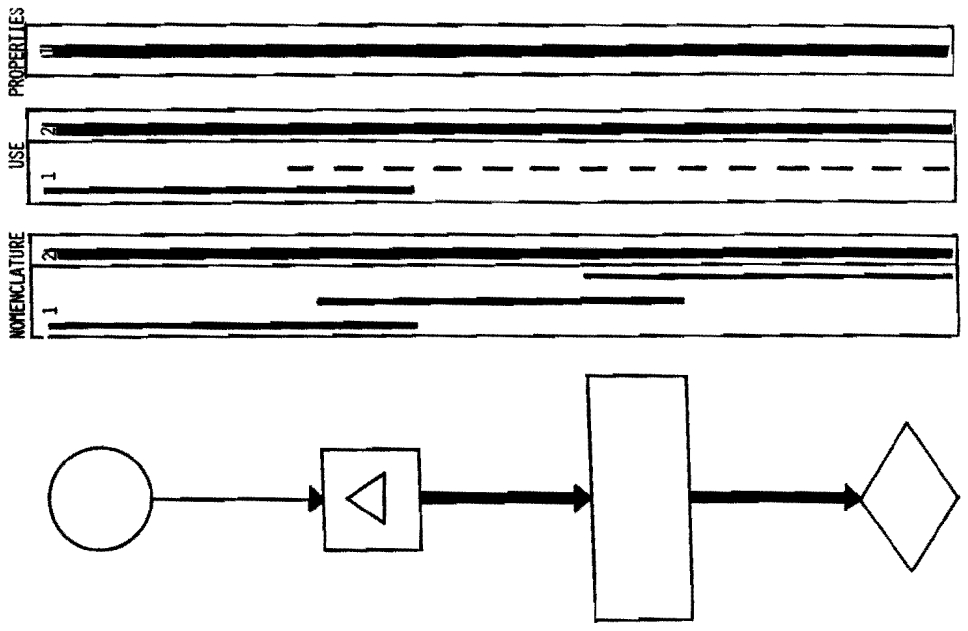

FIG. 6.— A common flow pattern of market plants illustrating the discontinuity and the continuity of information on nomenclature, use, and properties.

identification of the source plant populations and the associated gathering practices which may have ecological and evolutionary influences on the populations, and (2) the evaluation of the variation and reliability of the information on the relationships and interactions of the plants with reference to the experiences of (a) the collectors, (b) the vendors, and (c) the consumers. A common flow pattern is presented in Fig. 6. It illustrates how we plan to evaluate our data with reference to continuity and discontinuity of information on nomenclature, use, and properties of the plants at different levels of the flow process.

Case 1 of nomenclature shows discontinuity in that the names used at different levels between the source area and the consumer are different. Although the same plant may be desired, the resale vendor must be aware of the different names. He/she provides an important link in our comparative study of the same plants among different peoples. Two examples include: (1) *Eupatorium collinum* DC.: in San Juan Tepecoculco, México, it is called "yerba de burro" while it is sold in the Mercado de Sonora as "yerba de angel"; (2) *Satureja macrostema* (Bentham) Briq.: in Santa Ana Tlacotenco, DF, it is called by its Nahuatl name, "tiochil", while in the Mercado de Sonora it is sold under the name, "té del monte". Case 2 of nomenclature illustrates continuity where the name applied to the plant is the same throughout the exchange.

Case 1 of use illustrates a pattern of discontinuity where the use may be known at the source area level but is not known further down the chain. The vendor is unaware of the plant's use but sells it because of the continued demand. Also, some of our "quien sabe" responses at the vendor or consumer level may be due to the prohibition of sale or use of the plant (e.g., the sale of "zoapatle" *(Montanoa tomentosa* Cerv.), an abortive, is subject to a fine of $10,000 pesos). Case 2 of use shows continuity where the use of the plant is the same throughout the system.

Case 1 of properties which may be attributed to the plant (e.g., "hot", "cold", taste, nutritional quality, etc.) is continuous.

Ecological and evolutionary factors.—There are many ecological and evolutionary factors in the ethnobotanical process associated with market plants. Two examples include:

(1) Gathering habitats. Plants can be derived from gathering habitats which have wild populations or anthropogenic populations (i.e., those which are responses to human disturbances). Plants can also be derived from cultivated habitats which have non-domesticated plants or domesticated plants (i.e., plants that are genetically altered due to human selection).

Ecological analysis of the medicinal plants from Santa Catarina del Monte, Mexico, recorded by González R. (1981) and by Bye and Linares (in progress) is summarized in Table 1. About 75% of the medicinal plants come from human manipulated habitats (i.e., anthropogenic and cultivated environments). Over 81% of the Santa Catarina del Monte plants sold in the Mercado de Sonora are collected from this modified environment. The modification of the habitats as well as the genetic selection and maintenance of certain plant populations represent intensified interactions between plants and people. About 25% of the medicinal plants are derived from the wild habitats.

(2) Condition of the plant. The morphological and chemical condition of the plant in the markets is based on certain ecological and evolutionary factors among others. For instance, "jarilla" *(Senecio salignus* DC.), which is considered a "fresh" plant and is used for baths, is commonly sold in the markets in the vegetative stage. This plant is found in the native habitat of forest openings as well as in the anthropogenic habitats near and inside the town. Although it is found in the forest, the collectors obtain their material from the plant populations near the town. Leafy branches are cut throughout the growing season. Even during the flowering season (February through April), the market plants are usually without flowers. This non-flowering condition reflects two factors. First, the vegetative state is considered to be more effective than the flowering state. Second, the collected plants tend to be more leafy and with fewer flowers than the plants in the

TABLE 1.—*Ecological analysis of medicinal plants from Santa Catarina del Monte, México.*

HABITATS	GATHERED		CULTIVATED	
Plant Populations	Wild	Anthropogenic	Non-domesticated	Domesticated
Total: 114 species (González R., 1981; Bye & Linares)	28	52	2	32
Sold in Mercado de Sonora, DF: 38 species (Bye & Linares)	7	12	2	17
Market plants: Recorded in González R. (1981): 23 species	3	10	2	8
Additional plants recorded by Bye & Linares: 15 species	4	2	0	9

natural communities. Often the leafy shoots represent coppice sprout growth—a response to continued cutting. Thus the effectiveness and the plant's response to gathering practices are related to the morphological and possible chemical conditions of the plant in the market despite the general phenological pattern of the natural populations.

CONCLUSIONS

Although the study is still in progress, we can make some general conclusions. First, the "tianguis" market system is still important in Mexico today, as it was in the past. Second, the markets of Mexico can provide much data for ethnobotanical studies from various points of view. Third, the plants in the market represent the intensification of interactions and relationships between people and plants. A majority of the medicinal plants of the Mercado de Sonora is derived from the human-modified environment. Fourth, the diversity of edible and medicinal plants of the market will be important in Mexico's future because the exchange system allows for alternative choices of plants and plant products which have multiple uses and which may be more effective and less expensive than products of extensive, commercialized, and centrally controlled manufacture and distribution systems.

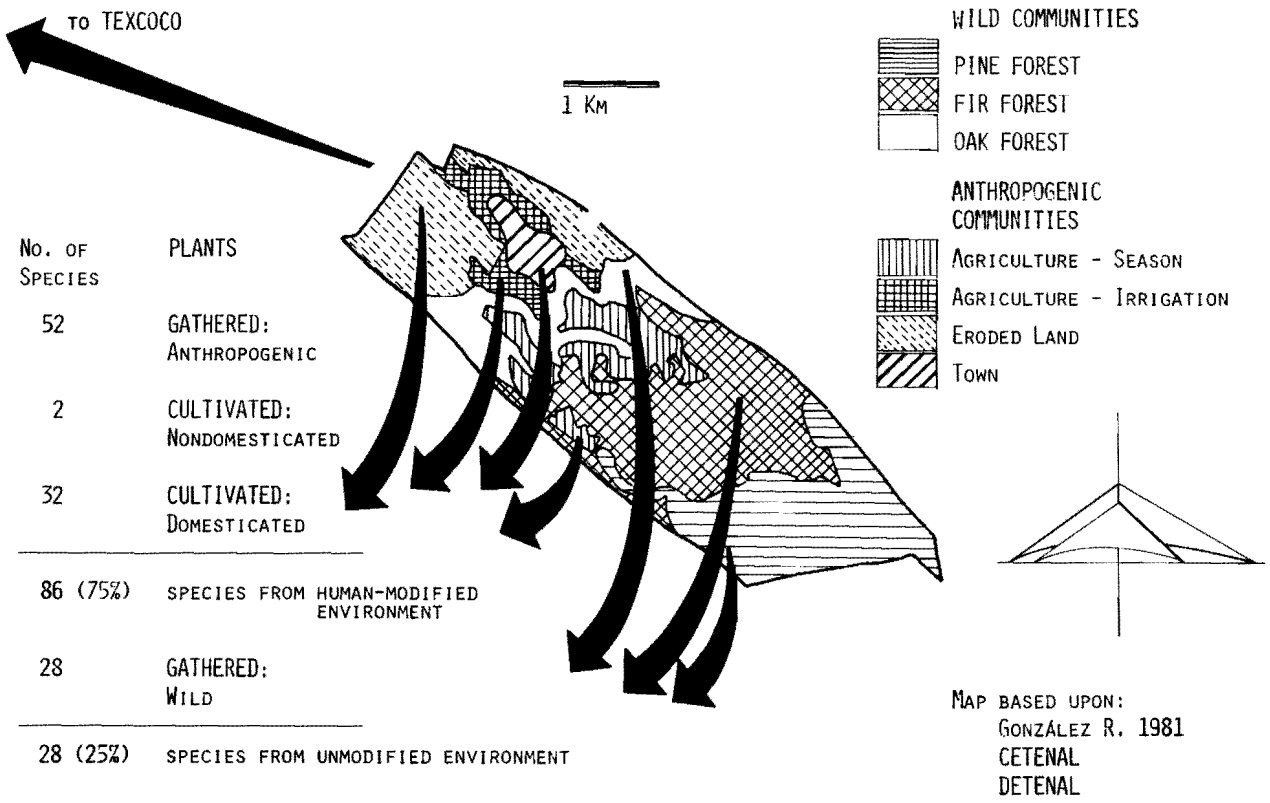

FIG. 7.—Map of the ejido of Santa Catarina del Monte, México, one of the source areas for medicinal herbs in Mercado de Sonora, Mexico City. The seven ecological zones are divided into 3 wild communities and 4 anthropogenic communities. An ecological analysis of the 114 species of medicinal plants of Santa Catarina del Monte is presented on the left.

LITERATURE CITED

BENITEZ, F. 1962. Los Primeros Mexicanos. La Vida Criolla en el Siglo XVI. Editorial ERA, S.A., México, DF.

BYE, R.A., JR. 1979. An 1878 ethnobotanical collection from San Luis Potosí: Dr. Edward Palmer's first major Mexican collection. Econ. Botany, 33(2):135-162.

CORTES, H. 1981. Carta de Relación, embiada a Su Sacra Magestad del Emperador nuestro señor por el Capitan General de la N. Espana. *In* Hernán Cortés, Historia de Nueva España. Tomo II. Miguel Angel Porrúa, S.A., and Secretaría de Hacienda y Crédito Público, México, DF.

DIAZ DE CASTILLO, B. 1977. Historia Verdadera de la Conquista de la Nueva Espãna. Manuel Porrúa, S.A., México, DF.

GARIBAY K., A.M. 1961. Vida Económica de Tenochtitlan. (Informantes de Sahagún). Seminario de Cultura Náhuatl. Instituto de Historia, Univ. Nac. Autón. Méx., México, DF.

GONZÁLEZ, R. J. 1981. Ecología Humana y Etnobotanica de un Pueblo Campesino de la Sierra Nevada, México: Santa Catarina del Monte. Tesis de Biología, Univ. Nac. Auton. Méx., México, DF.

GUZMAN, G. 1981. Identificación de los Hongos Comestibles, Venenosos, Alucinantes, y Destructores de la Madera. Editorial Limusa, S.A., México, DF.

LEE, W.L., B.M. BELL, and J.F. SUTTON (eds.). 1982. Guidelines for Acquisition and Management of Biological Specimens. Assoc. Syst. Collections, Lawrence, Kansas.

PETERSON, F. 1959. Ancient Mexico—An introduction to the pre-Hispanic cultures. G.P. Putnam's Sons, New York.

RAMIREZ VAZQUEZ, P., et al. 1968. El Museo Nacional de Antropología: arte, arquitectura, arqueología, etnografía. Panorama Editorial, Mexico, DF.

ROSE, J.N. 1899. Notes on useful plants of México. Contr. U.S. Natl. Herb. 5(4):209-259.

RYESKY, D., and M. PANIAGUA. 1979. El comercio en plantas medicinales en el sureste del Distrito Federal: cinco estudios de caso. Cuadernos de Trabajo 23, Depto. Etnol. Antrop. Soc., Inst. Nac. Antrop. Hist., México, DF.

RZEDOWSKI, J. 1964. Una especie nueva de pino piñonero del estado de Zacatecas (México). Ciencias (Méx.) 23(1):17-20, lam. II.

RZEDOWSKI, J. 1978. Vegetación de México. Editorial Limusa, S.A., Mexico, DF.

SAFFORD, W.E. 1918. *Chenopodium nuttalliae*, a food plant of the Aztecs. J. Wash. Acad. Sci. 8:521-527.

SAHAGUN, B. 1979. Códice Florentino. El manuscrito 218-20 de la Colección Palatina de la Bibilioteca Medicea Laurenziana. Archivo General de la Nación, México, DF.

TARACENA, B. 1981. Diego Rivera: Su obra mural en la Ciudad de México. Ediciones Galeria de Arte Misrachi, México, DF.

VALENCIA, E. 1965. La Merced. Estudio Ecológico y Social de una Zona de la Ciudad de Mexico. Serie Inviestigaciones 11. Inst. Nac. Antrop. Hist., México, DF.

WHITAKER, T.W., and H.C. CUTLER. 1966. Food plants in a Mexican market. Econ. Botany, 20(1):6-16.

ACKNOWLEDGEMENTS

This study is part of a project for developing an ethnobotanical data bank for a national germplasm conservation program, Unidad de Investigación sobre Recursos Genéticos Vegetales, of the Jardín Botánico, Instituto de Biología, Universidad Nacional Autónoma de México. We acknowledge the support of the Jardín Botánico (director, Hermilo Quero) and of the Instituto de Biología (director, José Sarukhán). Juan Manuel Pérez C. assisted in the preparation of the map. We thank the many friendly herb collectors and vendors for their patience, information, and hospitality in the markets and in their homes.

NOTES

1. Over 90 edible fungi have been recorded as being sold in Mexican markets (Guzman 1980:28-30).